T H E T A S M A N I A N T I M B E R T R A D E

1830 - 1930

A Case Study in Spatial Interaction

BY

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CHAPTER I INTRODUCTION

Tasmania was a forested land when first sighted by Europeans. It remains essentially a forested land. The forests of Tasmania have served man well. Captain Bligh and other early seafaring explorers found in the forest the means for their continued survival. Colonizing Europeans sought in them self-sufficiency, others turned to them for commercial gain. The list of their uses continues to grow (water catchments, recreational areas, and wilderness retreats). The forests are ubiquitous yet the usual image of Tasmania is not of a forested land. A source of wonder and delight, and also of dismay and despair, the forests have beckoned and hindered settlement. In return the settlers have reshaped the landscape through their particular uses of the land but the forest has prevailed over large areas of the state.

Rather surprisingly, little attention has been given to the relationships which evolved between the European colonizers and the forest. Of all the possible aspects of study on this topic, only one has been selected. This study seeks to describe and account for the particular spatial and temporal patterns developed by the external timber trade over the one hundred years from 1830 to 1930. It will also consider the significance of this trade to the State.

An idiographic study such as this is but a part of the broader picture. British colonization brought Tasmania within the cultural and economic sphere of an expanding and changing Europe. The timber trade is seen as one particular example of the type of spatial system that Tasmania evolved against the backdrop of nineteenth and twentieth century world events.

Amongst the traits transplanted by the predominantly British settlers was a desire for a commercial money economy as this would provide the capital necessary for development and for imports of goods and services not otherwise available. In pioneering areas,

such an attitude encouraged the search for, and experimentation with, readily available natural resources which with little capital and minimal technological skill might provide *staple* items of trade and hence become a source of wealth. The timber trade must be seen within the historical context of a newly developing colony's search for a staple.

Trade serves many functions. For instance, the development and maintenance of specialization and regional differentiation is encouraged by exchanging the surpluses and specialities of one area for those of another area however indirect the exchange. Tasmania with its vast indigenous forests had the potential for specialization. It is thus of particular geographic interest to examine the flow of goods and the nature of the links to see if Tasmania capitalized upon this initial advantage. Just as the spatial interactions examined in this case study occurred within the framework of a particular pioneering society, it is expected that this possibly unique set of events will contain elements of the universal within them. Explanations will seek both the general and the specific.

Much change has occurred over the century. A systematic study of this change can attempt to determine whether these changes relate to variation within or between factors which remain essentially the same throughout, or if fundamental changes in factors are responsible. Time thus provides a sequence of situations in which to test the theories devised to explain such situations or to apply the theories devised elsewhere but still applicable and appropriate to Tasmania.

The scope of the study has been limited in several ways. Firstly it has been restricted by confining the topic to a study of the external or export timber trade. *External* refers to the shipment of timber from Tasmania to any other political unit whether colony or nation. The word *trade* will be used hereafter in this limited sense;

any mention of the internal timber trade for the local market will be specifically designated as such. The term *overseas* will have the currently accepted meaning of *beyond Australia*. Secondly, no attempt is made to relate the findings of this study to the present form and pattern of the timber trade. Thirdly, consideration of the complex evolution of the geography of the timber industry was limited to a broad outline.

Whilst not beginning with the first export, the time period does cover the formative years of the timber trade. Toward the end of the period, tentative steps were taken toward sustained yield management of State forests, and toward an alternative use of the indigenous timber - paper making, but these changes had no impact on trade in this period.

The achievements possible within a study based on a restricted topic over an extensive period of time depend heavily upon the available data; its form, quality and quantity. The limitations imposed by the data are considerable. Quantitative analysis, in particular, is found to be impractical but the breadth of the sources encourages the use of the approach of synthesis so characteristic of historical geography.

The subject of this study is the timber trade of Tasmania but the theme extends far beyond this parochial topic to consider the international flow of goods in the nineteenth century. This is a period when the world economy is beginning to function as an integrated system. In this sense Tasmanian timber provides a case study in a particular form of spatial interaction. Meinig (1962, 7) expressed the importance of studying the remote frontier locality in detail as:

> *It is precisely in this way that "by being thoroughly provincial," one may hope "to broaden the view."*

The theme encompasses complex processes that shaped the movement of timber, and the theme seeks a synoptic understanding of these

processes within the context of particular places (Harris, 1971, 164). Understanding of the theme is not restricted to the eliciting of sequence, nor to the topical dissection of events but depends heavily upon the assembly of separate but interrelated parts into a whole so that each aspect and each factor can be seen with proper perspective. Through synthesis, the sufficient and adequate conditions required for explanation (Harvey 1969,430) can be determined.

DATA SOURCES

This study is in the tradition of historical geography in Australia by depending heavily upon official government sources. The annual trade statistics published in *The Statistics of Tasmania* provide the hard core of basic data from which import and export trends have been determined. Most of the appendices are derived from this source. Much of the supplementary data came from other government sources. The Tasmanian parliamentary papers contained reports from government departments, petitions, legislation, and periodically reports from specially appointed Select Committees enquiring into such things as settlement, immigration and the provision of transport links. Government publications designed to inform the general public, and specialist reports by government officials often presented to scientific bodies such as the Royal Society of Tasmania or to conferences held by professional foresters are important in the later years.

Of special value were the technical reports prepared by two foresters and instigated under similar conditions three decades apart. The creation first of a special section within the Lands Department and later of a separate Forestry Department were followed by assessments of the forest resource and of the depressed industry exploiting it (Perrin, 1887, 1898 and Rodgers 1928).

The papers presented in 1928 to the British Empire Forestry Conference held for the first time in Australia deserve special mention as a valuable source of pertinent comment and data. The Rodgers Report (1928), for instance, was published as a conference paper. The conference stimulated the publication of a special edition of *The Forestry Handbook of Tasmania* (1928). Fortuitously, this handbook (1928, 16) contained a graph of Tasmanian timber export earnings from 1840 and thus by providing the only indication of total timber export values from 1910 - 1921/22 it fills a serious gap in the official record. The values used in this study were interpolated from this graph.

Other useful sources included the *Historical Records of Australia*, the Bigge Reports, contemporary newspapers, biographies, early descriptive accounts, and the reminiscences of old-timers who participated in the timber trade. A hand-written register of shipping entering and leaving the *Channel* ports of Southern Tasmania between 1907 and 1932 (but obviously incomplete from 1919) provided information otherwise unavailable. This register was kept for personal interest by James Sawer, of Hope Island, Dover, who came by the information while acting in his official capacity of customs officer for the area.

Comparison with other states is limited to the data readily available in the general literature and from basic primary sources. Neither were conspicuous for their quantity. The cross-section of the timber trade of all Australian states from 1898-1900 was made possible by the isolated collation published in the Commonwealth parliamentary papers of 1901. Later comparisons, and the long term Western Australia data were published as appendices to Lane-Poole's paper (1928) to the conference cited above.

Fieldwork within the narrow sense of augmenting the official statistics was no longer possible. However, a feeling for the period and a greater understanding of the physical and social setting

were obtained through the oral history already alluded to, and by visiting areas of supply particularly those with relict features. Though non-quantitative, the value of fieldwork in this broad sense should not be underestimated.

Limitations of the Data

In this particular study, a static view has been eschewed for the intrinsically more demanding and rewarding approach of determining change over time. However, the vertical approach makes heavy demands upon information sources. Inherent inadequacies and inconsistencies of the data increase the difficulties entailed in establishing the time trends which characterize the Tasmanian timber trade. The following discussion is essentially concerned with the fundamental problem of determining the trade trends. Other problems are raised in the relevant place in the text.

The limitations are most obvious in the periods when the trade statistics were either absent or incomplete. Prior to 1859, the trade statistics were patchy and inconsistent, though it should be pointed out that those for 1854 and 1857 conform with standard procedures. A continuous annual record of exports by value, quantity and destination for each itemized category exists from 1859 until 1909. From 1910 to 1921/22, the component due to interstate trade was not published creating a big gap in the record. From 1922/23, details of all timber leaving Tasmania are available. However the several changes in classification between 1857 and 1930 confounded by classificatory quirks interfere with the detailed interpretation of this data.

Discrepancies of two types were found even considering only total values. Firstly, there were problems in the items counted as *timber*. Appendix 1 has been adjusted to consistently omit the export value of non-indigenous timber (willow) and trans-shipped timber.

The second was due to error and in the compilation of data. Occasionally, the detailed individual entries and annual totals (published separately) differed, and could not be reconciled. Also, lists of annual totals published in later years showed some variation from the original. In one case a major omission was footnoted ten years later to an adjusted total but the detail concerning destination was never printed.

Heavy dependence has been placed on changes in the value of exports to indicate significant growth or decline, and as a guide to the contribution made by timber to the State economy. However, the monetary value has not been converted or related to a constant unit of money; nor has any other adjustment been made to compensate for the changing value of the pound. Despite several depressions, the pound is considered to have been relatively stable throughout two-thirds of the period. Inflation became significant during this century. Accelerating inflation in combination with the building boom of the early 1920's is reflected in the sharp price rises of that period (Appendix 20).

Inadequacies in the information concerning the volume of timber exported precludes its use to supplement or to replace value as an indicator of trends. This is unfortunate as the constant unit would have ensured comparable data. Exports of sawn timber seem to have been measured in superficial feet (abbreviated to sup. ft.) though described as *feet* until 1890. It is interesting to note that until 1880, imports were recorded in a different unit, *loads* a measure used in England and Scandinavia. The dual use of two absolute volumetric units offers no problem as conversion factors are readily available. The major problem stems from the fact that numerous items are counted by number giving little or no indication of size. Logs and shaped pieces fit the latter category. The approximate dimensions of palings, shingles, battens, staves, etc. are known, but the relationship which would convert number to volume was not sought as thickness, width and within limits, length varied considerably throughout the period. An approximation was undertaken by Rodgers (1928) but the basis for the conversion was not given, so consequently

it has not been used. Except for two periods when market prices rose dramatically (1853-4 and from 1920) quantity and value are believed to have similar but not identical patterns of growth.

Looking in more detail at the classificatory system reveals important inconsistencies, firstly due to changes from one classification code to another, and secondly, in its application. The trend with major classificatory changes was toward simplicity. Successively fewer categories were used. The category in which particular products were placed, either by the collector or the collator of the customs data shows variation over time and could create false impressions. For example, piles and beams, either hewn or left in the round are variously and apparently arbitarily combined with logs in some cases and with 'sawn' in others. In another case, the earlier exports of blackwood appear intermittently as logs and as blackwood. A further problem arises from the time span so that once common terms become obscure creating an opportunity for misunderstanding. 'Pieces' and 'deals' were prime examples.

The port of exit for the timber trade was available for 1857-1878 and 1922/23 onward. However, on closer scrutiny all of the earlier and much of the later data are revealed as merely book-keeping entries referring not to the actual port from which the shipment sailed, but to the port authority (Marine Board) administering that area. Thus the port data should be interpreted as a description of region, e.g. the south. In the later period some discrepancies between the separated ports and market data occur and are irreconcilable since one omits the other.

Despite these very real problems, the data did cover a long period of time with a considerable degree of uniformity which must render some validity to the conclusions.

Historical Geography and the Forest

Two characteristics stand out clearly in a review of the literature pertaining to the historical geography of forests. The first is the breadth of themes encompassed by the topic, and the second is the relative neglect of the topic. Other aspects of man's activities such as settlement in general and agriculture in particular have been the subject of more intense scrutiny. Explicit interest in the forst has ranged from the reconstruction of the extent and composition of the forest through a broad sweep of man's activities within, and attitudes towards forested or formerly forested regions to examination of the role of man in modifying the face of the earth. Few individual studies were narrowly focussed on a single aspect. All the studies reveal the influence of data sources in setting the parameters of the study and in defining the most appropriate methods. Whenever possible a wide range of sources was utilized to describe several themes highlighting the importance of synthesis in historical geography.

The major themes can be categorized as reconstruction of the forest, attitudes to the forest, forest frontiers of settlement and permanent economic utilization of the forest. Attempts at reconstructing the forest clearly illustrate the role of data in setting the limits and possibilities of the study. The extent of forest at particular times is frequently the maximum that can be gained though density (e.g. Darby's Domesday geographies) and species mix (e.g. McIntosh, 1962) can be determined in special cases.

Behavioural aspects have received scant attention despite their potential for explanatory purposes as demonstrated by some recent North American studies (e.g. Harris 1975; Maxwell, 1966; Peters, 1972; Thompson, 1970). Perception as a basis for interpretation and action was traced through maps, written descriptions, official records and legislation. Synchronous spatial differentiation and the changes over time are shown to be an outcome

of particular attitudes and values. Spatial consequences of attitudinal change are outlined by Kromm (1968) in a study of lumbering activity and settlement patterns in Northern Michigan before and after the acceptance of sustained yield management.

Studies of frontier settlement are, given the current emphasis, primarily studies of agricultural pioneering with incidental mention of forests and forestry if the area of colonization was originally forested. Some New Zealand studies (Franklin, 1960; Johnston, 1961; Petersen, 1965) give serious attention to the relationships evolving between the pioneers and the retreating forested environment. Harris (1975), Lower (1936) and Maxwell (1966) do likewise for Eastern Canada.

Explicit studies of the forest resource as the stimulus for settlement concentrate on either the timber industry in economic, technological and locational terms or the implications and legacies of that activity. The tendency is for the former group to be evolutionary studies of change (Arnold, 1976; Dinsdale, 1965; Hardwick, 1963; E. Stokes, 1966), whilst the latter are frequently 'then and now' studies (G. Stokes, 1957; Head, 1975). Prior to sustained yield management, large-scale extractive exploitation could only be transitory, and the likely duration of forest-based activities at any one place depended upon the local combination of quality, quantity, market demands and the technology, capital and enterprise available. Since the forest in Tasmania was not treated as a renewable resource prior to 1930, the literature on the permanent economic use of the forest has little relevance to this study.

Studies concentrating on trade are rare though incidental and superficial references are commonplace. The substantive writings concentrate on the forested areas of North America, Scandinavia and New Zealand. Most tend to be particular rather than general. Some remain more interested in other related aspects, for instance, the brief study on the rise and fall of the port of Kiapara, New Zealand (Wright 1969) was more intent on tracing the pattern of shipping using

this harbour than in the pattern of its predominant export. Another New Zealand study is interested in trade only to the extent that it affected the local sawmilling industry, particularly the damaging impact of cheap imports from North America (Arnold, 1976, 117-120).

Three comprehensive regional studies provide coverage of the export timber trades of Ghana and Scandinavia. Dickenson (1969, 176-178) describes the evolution of the export timber trade of Ghana over the years 1894-1936. A bar graph of quantity exported annually shows sizeable but irregular fluctuations superimposed on the long term growth trend. Demand and transport are described as the key to the fluctuations. Dickson implies that European demand for Gold Coast timber exceeded the supply for all but two periods - the First World War and the depression of the thirties. All other fluctuations were attributed to variation in supply which was seen as a function of the accessibility of the timber to transport. Initially water transport was used and the highs and lows in the export pattern correlate with river levels. Later accessibility depended upon proximity to railways and low export figures reflect periods when exhaustion of the forest resource exceeded railway construction. The timber was used for cabinet making but no reason was given for the demand.

Head (1958) and Millward (1964) present the Scandinavian timber trade as an integral part of a comprehensive coverage emphasizing the forest-based industries. Both writers use similar explanatory factors, but stress different aspects. The evolution of the sawn timber trade is described by Millward in terms of *a series of revolutions in the demands of overseas markets.* Technological and market revolutions set into motion major changes; they enabled forest products to travel further and in greater quantities, and they generated new, alternative, highly processed uses for wood more lucrative than lumber. Narrative dominated the presentation. The overseas trade was seen as crucial to industrial development in an area lacking a home market capable of stimulating such growth, however, only the internal trade was described in much detail.

Mead (1958) made useful comments on the confusing terminology found in the timber trade, the northern hemisphere softwood trade and the relative output, value and uses of hardwoods and softwoods. The rapid growth of the timber trade in the period from 1850 to 1900 was illustrated by reference to the exports of the Bothnian ports in Sweden and explained by the concept of economic distance as developed by Watson (1955) and von Thünen (Mead, 1958, 93-102). The *discipline of distance* created zones of specialized forest activity within Scandinavia (Saarinen, 1969, gives greater details for the Finnish zones). Relaxation of the discipline of distance which began with the transport developments of the nineteenth century transformed the timber trade. The resultant increase in accessibility combined with falling freight costs coincided with a time of rising demand in overseas markets and led to the emergence of new patterns of specialized activities.

Eastern Canada shared the benefits of the transport revolution but progressivley lost the preferential treatment it had received in British markets (Albion, 1926). The Ontario timber trade and its relationship to the structure of the industry over three decades of development and change are outlined by Head (1975) who also pointed out that timber, though unacknowledged, was a prime staple, rivalling wheat in value of exports. The trade data for Ontario is presented as irregularly-spaced cross-sections, doubtless reflecting the data sources. The only continuous data was for production from one region. Explanation was in terms of demand, transportation and the migration of productive areas due to destructive exploitation. All of the discussions on trade tended to be descriptive and none showed the detail of timber flows as used by Ullman (1956) to illustrate his original statement on the preconditions for trade.

This account of the Tasmanian export timber trade is the beginning of a larger study on the geography of the timber industry over the same one hundred years. Since the only clues to some aspects of the timber industry are contained within the trade statistics, they became the starting point. The story of the Tasmanian timber trade is presented as a systematic study of change integrating narrative and a topical approach. The earlier chapters are descriptive, emphasizing the changes as they occurred over time and attempting to set events and trends within their proper context. The images held of Tasmanian forest as a wealth-creating resource are examined in Chapter 2 for contemporary attitudes and expectations, while the following chapter assesses the performance of the forest-based export trade by reference to its importance in the State trade economy and by comparison with the export timber trade of another Australian state. Included in Chapter 3 is a description of the evolution of the Tasmanian timber trade. The analysis of the detailed trade statistics in Chapter 4 enables a picture of the nature of the trade to be constructed and Chapter 5 outlines the factors responsible for this pattern of trade.

CHAPTER 2 GREAT EXPECTATIONS: THE OFFICIAL VIEW

Perception as a precursor to action has been one of the key factors shaping the evolution of resource development within Tasmania. Perception reflects cultural and individual goals, experiences and personalities and is subject to modification by circumstances. Past perceptions are revealed through analysis of man's words and deeds. Much of what follows is a study of words and deeds as they relate to a particular type of environment. Appraisal of the Tasmanian forests occurred within the framework of the contemporary value system. Factors such as the concept of *best* land use embodied in government legislation and practised by settlers and officials alike, and the role of the government with respect to the provision of infrastructure and its relationship to private enterprise were influential in determining the course of the timber industry and the associated timber trade.

The perception held by individuals in a position of power is considered to be of particular importance in this respect but only the political and administrative views have been explored in depth. Elucidation of this official view revealed a sequence of attitudinal changes which form the basis for three distinct periods each characterised by a particular perception of the timber resources and their worth.

The analysis was based on a survey of official papers including published correspondence, reports and government handbooks for the general public. Thus, the word *official* is interpreted as referring more to public servants and administration than to political comment and policy. Both explicitly stated views and those implied though the particular use of language was sought. Comment by government officials on the subject of timber tends to be irregularly distributed through time; not only are some years richer than others, but at times there is a dearth of comment. Almost all of the comments used are of the evaluative type, that is, they describe a person's opinion(s) of the forest (Sarre, 1972, 37). Few fit the other

categories of affective, rational or descriptive constructs. Adjectives were found to be particularly revealing. One interesting facet in the later periods was the change from certainty to the conditional and back to certainty as shown by verbs such as *is* and *should be*. The latter was interpreted as indicating that the perceived potential was not being realised.

There is no intent in this chapter to directly relate percept and behaviour, or to judge the validity of the views propogated during any of the phases. Differences of opinion can be found throughout the period under study. At times, official views and government policy were at variance with official practice, especially if responsibilities were shared by several departments or if incompatible policies were pursued. The general public did not always share the official view. The views emphasized are those held by the officials having the most contact with the forests, and therefore best placed both to assess the potential of the forest environment and to influence government policy on its exploitation.

The image of the forest upon which settlers and politicians are traditionally believed to have acted is the one described by Mault (1901, 127):

> *On the vistors who came to stay as settlers, (the immense extent of forest land in Tasmania) made an unfavourable impression, as its signification to them was the cost of clearing land for cultivation. And this impression has coloured and affected all that has been done in the way of dealing with forest land in the State. Trees have been regarded almost exclusively as impediments to agriculture, and not as possessing any intrinsic value worth consideration.*

That this was not the only image of the forest held by Tasmanians will become apparent in the following sections.

I: PERIOD OF EXPERIMENTATION, 1800 - 1840's

The settling of Europeans in a land so remote that communications with the homeland required a minimum of many months forced the settlers to seek self-sufficiency in their environment. That this environment was alien to their experience necessitated considerable readjustments. The struggles in adapting English agriculture to the vagaries of Port Jackson are described by Perry (1963). Just as this revealed conceptual limitations hindering the learning and innovatory processes upon which adaption of old systems to a new environment depended, so a similar study on timber would find likewise. As a wood-using culture, the settlers sought in the surrounding trees culturally-determined answers to some of their needs.

Even if experienced in British forestry and wood-working techniques, the early settlers faced great problems in adjusting to the strange trees of the new land. Much of the timber is particularly difficult to prepare satisfactorily. English-made tools designed for softer woods were inadequate for the job (Curr, 1824, 94). Hardness, heaviness and poor quality equipment, axes, saws and nails affected the ease of working. A compromise had yet to be reached between timber *green* enough to be more easily worked, but not so *green* that excessive shrinkage and warping ensued after construction was complete. This, then, was a period of adjustment to unfamiliar timbers, a period in which knowledge was gained largely by trial and error about the characteristics of the indigenous timbers, the uses to which they could be put, and the tools and methods necessary for the extraction and preparation of such timber.

The initial reactions of the European settlers toward these unfamiliar timbers seem to have been unfavourable. Delano, after spending the summer of 1803-4 sealing in Bass Strait commented on the stringy bark trees found along D'Entrecasteaux Channel. These were:

> ... *the finest groves of timber I almost ever saw,*
> ... *The wood of this tree is very hard and heavy but apt to be shelly and not sound at the heart*
> ... *(There are) several other kinds of hardwood, but not many of them are very suitable for building.*

Curr (1824, 110) after a longer experience concurred, stating that the timber of Van Diemen's Land:

> *... is not of the best kind and in many parts of the island the most desirable qualities are not found at all, or if found, are small and stunted in their growth,*

He went on to suggest afforestation with English trees, particularly oak, to provide for future needs with more suitable and familiar timber. Bigge (1823, 3:38) gave similar advice. Exotic species were planted throughout the cultivated area creating a reassuringly familiar landscape and giving shelter, but afforestation for timber supplies did not occur. Great use continued to be made of the plentiful, indigenous timbers for construction, decoration and fuel.

Official interest was of three types; satisfying English naval needs, satisfying government needs locally, and as an article of trade. All were viewed as ways of offsetting some of the considerable expense incurred by the British government in maintaining penal settlements in Australia. Convict labour was used to supply timber for all three purposes. The period is notable for the number of designated *trial shipments* and *samples* which were sent overseas both by the colonial government, and by private speculators.

Interest in Australian timbers for naval purposes took three forms; explicit requests for timber shipments, the reservation of all suitable timber on land alienated from the Crown*, and the Governors' instructions to specifically include timber in the

* The order granting land contained a naval timber reservation clause: *timber deemed to be fit for naval purposes growing on or that may hereafter grow to be reserved for the use of the Crown.* (Curr, 1824, 165). Bigge (1823, 3:38) recommended that the reservation be discontinued on the grounds that afforestation with oak would better suit naval purposes.

assessment of areas to be explored and settled*. Specific actions were intermittent in occurrence corresponding with shortage in the home country. Spars, in particular, were in demand, but there was interest also in any timber suitable for ship construction and repair. The initial interest in Australian timber is now considered to be one of the motivating factors which led to the planning in 1788 of penal settlements in a such remote location (Dallas, 1969; Blainey, 1966, 31). The second period of interest (1802 - 1804) coincided with moves to settle the southernmost portion of Australia. Serious problems beset both periods. Each experienced its own difficulties in locating, preparing and transporting suitable timber short distances to waiting naval vessels (H.R.A. I, III, 570-71; H.R.A. 1, IV, 10, 251, 258). The first timber came from Norfolk Island, the second from the vicinity of Port Jackson.

The third period (1819 - 1822) was the best organized with the supply ships H.M.S. *Dromedary* and H.M.S. *Coromandel* ordered to engage in a fact-finding mission to search out sources of suitable timber in Australasia. The reply (H.R.A. III, III, 149-151, 18th Jan. 1820) by William Sorell, Lieutenant-Governor of Tasmania, to the official request for help is highly informative about the contemporary view towards Tasmanian forest resources. After refuting the supposition that New South Wales cedar was also available in Tasmania, Sorell described the properties, location and availability of the three native species he regarded as valuable for naval purposes. All were pines, and all were in short supply due to their inaccessible locations hence his inability to supply more than a few logs as samples, and these few were *not of the best.* He concluded:

> *From all the knowledge which I have, and from that which the people who I called before you imparted, I do not think that the other Woods of this country are very valuable for Naval Purposes ...*
> *From the information which you received from the Master of the Government vessel, there seems the fairest prospect of success in procuring spars of any size at New Zealand.*

* Tasmanian examples, H.R.A. I, IV, 152, King to Bowen, 9th May 1803
H.R.A. III, I, 519-521, Macquarie to Meehan, June 1812

Within a month, the two naval vessels were in northern New Zealand waters seeking kauri, an ideal timber for spars. But, as in Tasmania, the relative inaccessibility of the timber inhibited procurement. The ships took respectively 10 and 12 months to obtain 98 and 108 masts (Stokes, 1966, 444).

Sorell, writing on the topic of timber to Under Secretary Goulburn (H.R.A. III, III 17 et seq., 2nd May 1820) advocated a favourite project, the establishment of a penal settlement at Macquarie Harbour so as to exploit the Huon and other pines found there in abundance. With coal thrown in for good measure the resource base resembled that utilized by the Hunter River penal station, New South Wales.

That the fourth and final period of naval interest (1833) followed immediately the publication of a descriptive account of Van Diemen's Land (Bischoff, 1832) is not seen as coincidence. For the first and only time, the request applied specifically to Tasmanian timber. The order was for blue-gum (Forestry Handbook, 1928, 11), the one timber described by Bischoff as both abundant and useful for shipbuilding. The smaller trees had an additional use as masts for small vessels for which they *are found to answer well* (Bischoff, 1832, 22).

From the naval viewpoint, Australian resources were not entirely satisfactory and interest lapsed. This was partly due to the highly specific needs of the navy, and the fashion in which supply and demand fluctuated with European power struggles. Two other major contributing factors were an incomplete understanding of the best way to treat and use, at least, some of the timber obtained, and the difficulty in procuring local timber best suited to naval requirements.

Compared with timber for naval purposes, the official interest in timber for trade and for local consumption was more persistent and simpler in its expression. However, the attention accorded the two goals was unequal, the latter usually dominating. The desirability of developing locally produced articles for export was widely held by officials. It would confer financial benefits on the home country by providing freight thus eliminating the need for ballast on the return trip, it would provide *profitable and*

productive employment of convict labour, and it would provide settlers with a source of cash that would help the colony become a market for English manufactured goods.

But theory did not accord with practice. In actual fact, little was done to positively encourage the development of an export trade in any commodity by private individuals, and the tariffs levied for local revenue on imports and some exports acted as disincentives until repealed. The colonial government exercised some control over timber production; it was inhibitory when government permission was a pre-requisite for the cutting of timber for export from Crown land (H.R.A. III, II, 45, 26th October, 1813), while, in its other role, as an almost monopolistic producer and supplier of highly valued types of timber - Huon pine from Tasmania's Macquarie Harbour, and cedar from the Hunter Valley in New South Wales, the government was both a constraint and a stimulus to trade. The two official roles were intertwined in the case of Macquarie Harbour. Initially acting as the authority determining access to Crown land, Lieutenant-Governor Sorell rewarded the initiative of a private individual, T.W. Birch of Hobart, with monopolistic access to a highly desirable forest resource for a specified period of time. The gains accruing to Birch convinced Sorell of the commercial feasibility of such an enterprise. (See H.R.A. III, III, 356-7, 20th March 1820 for Birch's account to Bigge.)

Of particular interest is the view held of the timber resources of this country by the colonial administrators. On the few occasions they are called upon to assess the timber resources, the comments by govehors and lieutenant-governors, both acknowledge the abundance and great size of forest trees, and reveal that increasing experience with indigenous timbers had led to discrimination between species with few being held in high regard*.

* Bigge (1822, 1:160) lists as useful in N.S.W., stringy bark, iron barke, blue gum (probably referring to E. salinga not to E. globulus) and cedar.
Sorell (H.R.A., III, III, 149-151) lists Huon pine, *pencil cedar, another fine pine* and stringy bark.
A list provided by the Overseer of Sawyers, presumably for the naval fact-finding mission, is more explicit (H.R.A. III, III, 563).

The terms used to describe selected local timbers are highly favourable and imply confidence and faith in the worth of such timber. Compared with the accolades bestowed on softer, special purpose timbers, *viz* New South Wales cedar, New Zealand kauri and Tasmanian pines, the praise for selected Eucalypts was prosaic and mundane. *Great durability and hardness* were the qualities cited. Rarely did official comment include other innate properties such as heaviness, and the problems of seasoning. Perhaps political instinct shaped their reply!

Sorell (H.R.A. III, III, 149-151) describes Huon pine as *one of the most useful woods in the world* and as the most valuable of the Van Diemen's Land timbers on account of its durability, lightness, ease of working and ability to repel insects. So high was his opinion of this timber and of the profit to be gained from its exploitation that he devoted considerable effort to this end. The rise of the Macquarie Harbour penal station relates to this expectation of its worth (H.R.A. III, III 17 et seq.); its demise to the falling profits caused by the diminishing accessibility of Macquarie Habour as increasing difficulty was experienced by fully laden ships attempting to cross the mobile sand bar at the mouth of the harbour (Edwards, 1975). Subsequent penal stations established in Tasmania during the 1830's and 1840's sought forested locations as one basis for productive convict labour, but the emphasis had shifted to eucalypts. Port Arthur, and the probationary stations such as Southport, Dover and Taroona fall within this category. The output was used primarily to meet local governmental needs.

Whilst the colonial administrators displayed an attitude of hope, their enthusiasm and confidence in selected Australian timbers was not shared by Commissioner Bigge who constituted a one man Board of Inquiry into the administration of the colony of New South Wales which at this stage included Tasmania. His instructions were very broad. Part of his brief was:

> *to inquire into and report upon the actual and probable revenues of the colony*
>
> Bathurst to Bigge, 6th Jan. 1819, Bigge Reports 1:2

Bigge was clearly unimpressed by the local timbers. But he could see no alternative source of supply, and as a consequence, foresaw great local use being made of the indigenous timber, and that timber would become an *important object* of colonial trade. His final prediction was that timber was unlikely to become an article of external trade being disadvantaged by its inherent properties including the heaviness which exacerbated the problem of the long expensive voyage to market. The one forest-based product for which Bigge expressed optimism was tanning bark.

The scant official interest shown in the hardwood timbers belied their importance in the life of the colony. Timber was and would continue to be the major building and roofing material. In addition, it was used for fencing, bridges, shipbuilding and the foundations for the early hillside roads (Curr, 1824, 17). Whilst aware of its local importance, the popular view, though not universal, mirrored the official view. None of the early writers included hardwoods on their lists of current or anticipated trade items but all included Huon pine and tanning bark. Ironically, in a period marked by experimentation and behavioural adjustment, official perception lacked the flexibility required to accommodate to reality. The special, but different qualities and availability of native pines and hardwoods were not seen in perspective. Unheralded, the timber trade had begun.

PERIOD OF GREAT EXPECTATIONS: 1850's - 1870's

Two extraordinary years form the watershed between the old and the new image of the hardwood forests. The "Tasmanian Traveller" wrote in the *Tasmanian Mail* (July 18, 1885) of the first settlers at Geeveston in Southern Tasmania:

> *Agriculture was the first intention, but the Victorian gold diggings suddenly created a market for what this valley had an ample supply of, namely, timber, so the axe, splitting knife and saw took precedence of the hoe and the plough, and have continued without intermission since.*

The accuracy of the long-term conclusion is dubious, but this sudden reappraisal was a widespread reaction to fantastic prices and insatiable demand in Melbourne for timber. The two turbulent years of the gold-financed timber rush provided Tasmanians with a golden opportunity to capitalize upon the locational advantage provided by prime forests extending to tidewater. One such timber entrepreneur described the building frenzy in the following matter-of-fact manner:

> *Weatherboard houses were being built round the suburbs of Melbourne by thousands, but the supply of timber was quite inadequate for the demand.*
>
> Fenton, 1891, 163

The bubble burst when an over-supply of timber glutted the market. A more modest demand followed the crash of 1855 and the timber trade revived. The high regard for Huon pine was to continue, but the hardwood forests were henceforth seen to be the basic timber resource of Tasmania.

The expectations initially held for the value of timber exports were unrealistically inflated in that they derived from an extraordinary situation which was unlikely to be maintained or repeated.

The chief government spokesmen of this expectation - both fully inflated and moderated - were surveyors. J. Calder, the Surveyor-General of Tasmania, expecting timber to maintain its new position of principal export stable, saw a new value for the Huon claiming that:

> *... our Southern lands, abounding in forests of trees unequalled in magnitude, and perhaps in value in the world, whose ultimate good effects on the fortunes of the country need not be dwelt on. The value of such countries cannot be exaggerated;*
>
> Calder, 1856, 8.

a view he was to reiterate in 1864. However by then, other government surveyors were voicing more moderate claims:

> *... timber for many years will be a most important article of shipment unless these forests are wantonly destroyed.*
>
> Scott, 1864, 12

In the assessments given in Crown Land reports, the large sums of money to be earned from timber are mentioned. The timber of the Sandfly Basin south of Hobart was estimated to be worth a quarter of a million pounds (J.H.A. 1864; 19, 23), whilst another surveyor in the same year considered that:

> *The timber between Piper's River and the Great Forester River must be worth at the very least £200,000 ...*
>
> J.H.A. 1864; 19, 5

Whilst the would-be agriculturalist$ among the general population may not have shared the surveyors' views of forests as

beautiful and valuable, very fine, superior and as *a source of wealth,* there can be no doubt that a significant and vocal proportion of the population concurred. The information given in petitions and as evidence to Select Committees of Parliament during this period confirms the importance of experience in shaping perception. All those in agreement with the government surveyors either had contact with, or direct percuniary interest in the timber industry. Their chief complaint was that the politicians gave preference to another land use - agriculture, and that this created difficulties for the industry, particularly the right of access to the timber resource. Timber-getters operating on Crown land had been required since 1834, to buy licences though enforcement of the regulation was relatively rare, however intending agriculturalists were given priority in the use of land covered by a valid licence. As settlement expanded into heavily forested areas the scope for conflict correspondingly increased. During this period, there was a reduction in direct government involvement. All penal stations but that at Port Arthur were closed down. The timber industry and its trade was firmly in the hands of private enterprise.

But the influence of government did not stop there. Another widely held view, of which the surveyors were strong advocates, was the benevolent role to be played by the government in the provision of routeways. For instance, resources without access were worthless:

> *There would also be a great income from the timber, for timber merchants in Launceston tell me they cannot get enough to supply the demand; and one affirmed that, if a tramway were made into the fine forest about Piper's River, he could find a market for all the timber a hundred men could split.*
>
> Richard Hall, J.H.A. 1864; 19, 5

Many of the claims concerning the wealth to be derived from timber made by surveyors and by the general public were given as justifications for proposing that the government build specific tramways and roads. The provision of such infrastructure was seen as a pre-requisite to the utilization by private enterprise of this great wealth. In return, the government would benefit indirectly by the increased prosperity and by the expansion of settlement as it was predicted farmers would follow the splitter and the sawyer. Discussion on the location of these proposed routeways, the preference for tramways, the proposed methods of organizing tramway services, and the outcome belongs elsewhere, but it is of considerable interest that the cost of establishing such transport systems was considered to be beyond the capabilities of individuals. Timber interests looked to their government to make the investment.

There is no doubt that settlers displayed ambivalence toward the forest. Contemporary documents are replete with references to a situation akin to that which was to face the settlers in the forests of the North Island of New Zealand (Franklin, 1960; Petersen, 1965). Without transport to market, the tree could not become a thing of value, and hence assumed the alternative guise of an obstacle to agricultural development. Without transport, destruction of the forest was inevitable.

PERIOD OF CONDITIONAL GREAT EXPECTATIONS: 1880's - 1930

As implied in the title, the evolving attitudes towards the forests were mixed. The model of the forest perceived and presented by a distinct group of officials was optimistic as to the *immense latent value ... in our forests* (Green, 1901, xx), but pessimistic in the extreme as to the likelihood of realising this wealth. It was also a time of continuity and change with one contradiction towards the utilization of the forest resolved and another emerging. These contradictions refer to conflicts of interest; that resolved related to the *best use* of Crown land, whilst another arose over the *best use* of timber.

Pronouncements of high expectations for forestry continued unabated. The strongest advocates were now the government-appointed forestry officers, particularly the Conservator of Forests and other specialists such as Mr L. Rodway, Government Botanist, and Mr A.O. Green of the Railways Department. Early in the period, there is a suggestion of an upward revaluing of timber's potential as a wealth-creating resource and this was at a time when the timber trade was declining in value. However this optimism in the future was bounded and restrained by dismay at lost chances and contemporary practices. The need for caution, conservation and care foreseen in the earlier period of unbounded optimism was viewed as urgent. In fact, the failure to achieve the great potential was seen as not only a distinct possibility, but as a more likely outcome. Perrin (1887a, 59:5), the first Conservator of Forests in Tasmania expresses these feelings:

> *Timber which in years to come will be very valuable is, in the most ruthless and wholesale manner, destroyed by farmers and others, who now only see an enemy in the wooded features of their holdings which by-and-by might become of more value than the land itself.*

Similar views often accompanied by advice are repeatedly expressed in the *Papers and Proceedings of The Royal Society of Tasmania.*

For approximately a decade from 1893, forest use and conservation were frequently raised. A few members felt very strongly on the issue; they and others delivered papers on the topic at irregular intervals. The source is all the more fruitful as the discussion provoked by the papers was also recorded. The evidence presented to the Select Committee on the Huon Railway in 1887 indicates that some members of the general public shared the vision of the forest's potential wealth. The introduction in the relevant Report accepts the same view (J.H.A. 1886; 138, vi). But the concern had yet to achieve a wide currency perhaps as the popular view was of an untapped forest of great extent. The expressions of dismay voiced by the well-informed minority were strongest while government policy and action either ignored or actively discriminated against timber getting.

Timber resources of Tasmania, in the view of the first Conservator being

> *of so varied a character combined with excellent quality, together with a superabundant supply, should lead to every encouragement being given to its conservation and proper care under regulation, in order that the supply may be kept up, and enable Tasmania ever to occupy the premier position as a timber-producing province among the Australian colonies.*
>
> Perrin, 1887a; 59, 7

Calder (1856; 16, 8) had been the first to express the same view. Little had changed in the intervening decades. The State government had inherited from the colonial administration not only the belief in its right to control forest exploitation on Crown land, but a legal structure and licence system which it had extended. Its enforcement remained ineffectual. Perrin's report (1887a) had little immediate effect on either forest management or government policy and practice. Nine years later during the period (1892-1919) when the position of Conservator was left vacant, the Surveyor-General and Secretary for Lands, E.A. Counsell undertook a survey of the

Tasmanian timber industry for the Minister for Lands and Works (E.N.C. Braddon). His strongly worded report condemns the neglect and the waste of the forest as well as the almost non-existent financial return to the government for the exploitation of Crown land.

> *It is strange why the timber industry which should have been one of the country's principal revenue-earning assets almost from the beginning should have been so utterly neglected in the past ...*
>
> Counsell 1898: 48, 4

Nor was he alone in this conclusion:

> *Forestry has never received the attention its importance deserves from either our governing or our scientific bodies ... Certainly it has never taken its proper place as a matter of policy and public utility!*
>
> Rodway, 1899, liii

This conclusion is not surprising. Great expectations, however conditional, remained a minority viewpoint. The popular image was more limited, and agriculture remained unchallenged as the *best* land use. The same E.A. Counsell (1901, xx) expressed this bias against forestry:

> *a country could not be opened up by the timber trade alone ... Good land in this State is too good to be utilised as timber land.*

The settlers had long expressed this attitude in their actions. A visiting English timber expert stirred a small controversy by declaring:

> *... I saw the waste - wilful and ignorant destruction of some of the finest trees which ever existed in any country ... I felt really heartsick as I looked at such standing monuments of man's ignorance and folly in destroying or allowing to be destroyed, such a valuable factor in the prosperity of your country and of its climate.*
>
> *On investigation I found that bushfires, on the one hand, and wanton and useless ringbarking and burning on the other, were the principal causes of this deplorable destruction of such valuable property.*
>
> *... there ought to be some immediate and drastic measures taken to prevent this national loss to property.*
>
> Heyn, 1901, 30-31

No-one denied the waste. The argument centred around its extent and inevitability. Local critics considered that Heyn's criticisms applied as much to the timber-getters themselves as to the farmers and would continue to do so until close supervision of forested Crown land became government practice. Indifference not ignorance perpetuated the situation.

The changing attitudes of politicians were crucial as in an *ad hoc* manner, the government was slowly changing its stance on the use of forested Crown land. There were three officially sanctioned uses of such land - farming, mining and forestry: in any conflict of interest, the last received least priority. This long standing contradiction was resolved during this period when for the first time since Sorell, timber-getting received priority in the use of some Crown land. Certainty of access to timber on Crown land dates from 1895. Prior to this the holding of a timber did not guarantee continued sawmilling supplies. This change was to have a great impact on the sawmilling industry.

The other government move in this direction was the reservation of forest for timber purposes. The *Waste Lands Act of 1881* acknowledged the importance of timber by enabling the Governor-in-Council to reserve land for the preservation and growth of timber. Incidently, it also marks the start of the State parks system as Crown land could also be reserved for public recreation. Accepted in principle in 1881, the first reservations were made in the late 1880's. By 1912, the idea was greatly extended thereby reversing, to some extent, the original situation. The principle of closer settlement for agricultural purposes was combined with the principle of harvesting the timber on Crown land before such land could be alienated for agricultural purposes. This placed a considerable restriction on the Crown land available for settlement. The result was to create the broad framework of land use that still exists today. The principle that forestry could be the best use of a large portion of Tasmania's land has persisted.

However, these policy changes lacked full commitment. For instance, timber reserves could be revoked by gazette on sixty days' notice. Further, the implementation of policy change was slow. The appointment of a *fit and proper person* to the newly authorized position of Conservator of Forests in 1886 heralded the real start of this period. The first two holders of this office effected little change. Their section was understaffed, and six years after its creation, the post became vacant to remain so for 27 years. This official expression of interest in forests may be aptly described as tokenism. A short-lived surge of interest began in 1898, and gradually a distinct section concerned with forest management grew within the Lands Department to become in 1920 a separate government department. But its finances and sources of income remained meagre. Nevertheless, this growth of bureaucracy indicated a growing interest in the wealth of the forest but the pattern had been set, partial commitment was to persist and would inevitably reduce the effectiveness of any changes.

So the view of great expectations was now official and was propogated by a wide cross-section of administrators and politicians. However, it is clear that the newly converted had ulterior motives. To them, the timber industry's role was to serve and support the local mining and orcharding industries. Some politicians, administrators and private citizens went so far as to suggest curtailing the external timber trade and hence eliminating all possibility of timber shortages damaging essential local industries. In much the same vein, the newly created but poorly financed Forestry Department put its energies into afforestation with pines in order to fill the gap in the local needs and the continued neglect of the indigenous hardwood forests was inevitable. By 1930, the great expectations became subdued, almost quiescent, awaiting the revival that was to follow the Second World War.

This survey of the perceptions held of the forest serves two purposes. The perceptions held by those in positions of power, particularly political power, has had a major effect on the evolution of the timber industry. The major forest resource was located on Crown land. Perception and accessibility (both legal, and in terms of availability of transport) determined the use made of the forest. The relevance of these actions will be seen in Chapter 5.

Many of the officials advocating the potential of timber as a wealth-creating resource clearly stated the specific outcomes they expected to be achieved. These include an assessment of the nature of the forest resource of the island:

- *some of the most valuable hardwood timbers to be found in the Southern Hemisphere (1921)*
- *vast quantities of very valuable timber of great variety*
- *representing enormous wealth to the state (1900, 1921)*

that could be

- *of more value than the land itself (1887)*

providing

one of (Tasmania's) principal revenue-earning assets (1898).

Such expectations could be used as criteria by which to judge the achievements of the timber industry. The extent to which one aspect of this potential wealth was realized is partially revealed by the examination of the trade statistics of Tasmania.

CHAPTER 3 THE REALITY

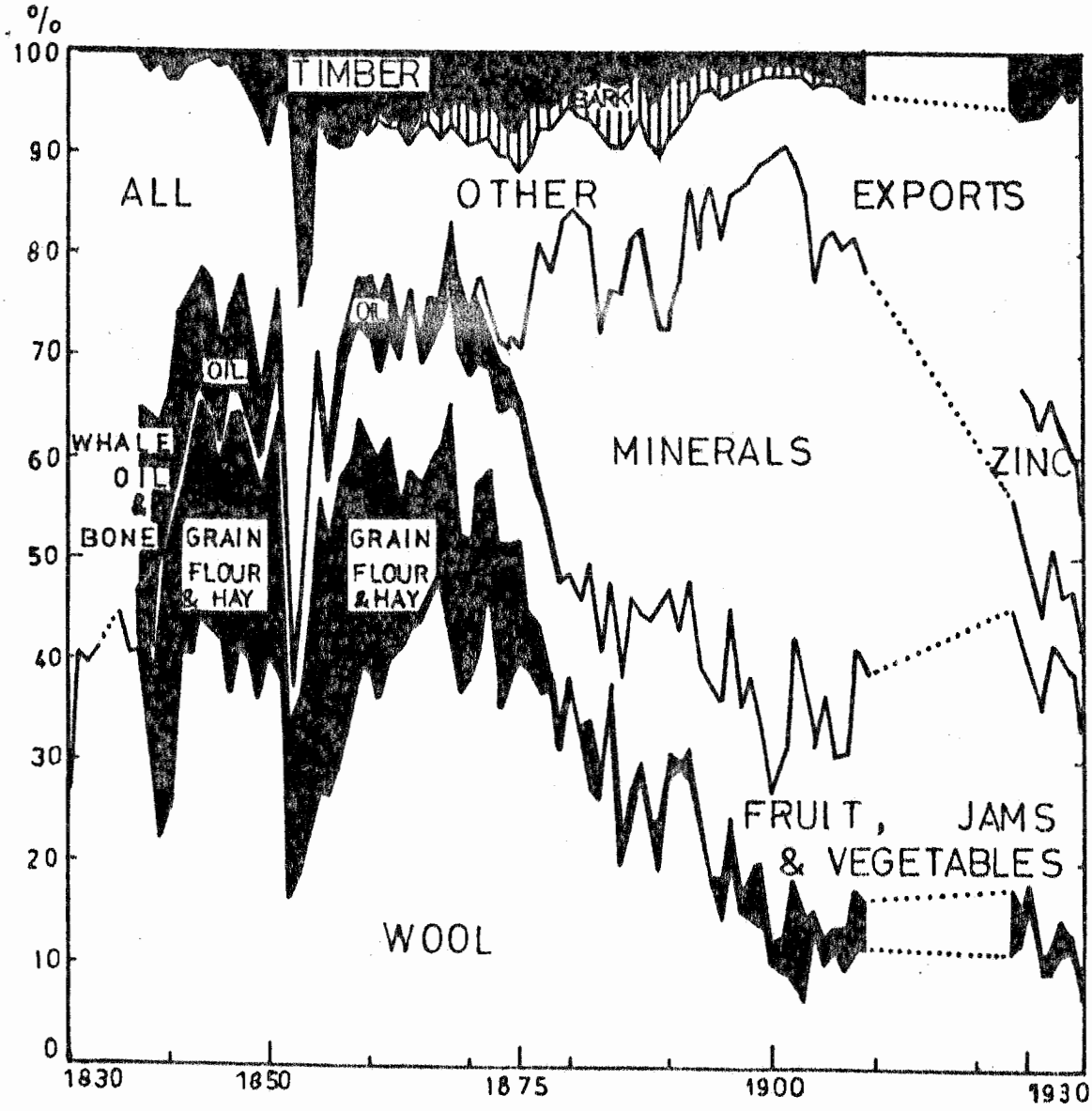
Four characteristics of the external timber trade during the century 1830-1930 stand out clearly. Three of these are its persistence, its high rank among Tasmanian exports, and the value of its contribution to the State trade economy. Timber is regarded as one of the principal commodities produced by Tasmania for export and is thus a stable item of trade, albeit a middle-ranking one. Two extraordinary years following the Victorian gold rushes form the only exception to this generalization. In 1853 and 1854, timber products accounted for one-quarter and one-fifth respectively of total export earnings. However, the timber trade failed to maintain this level of importance, and in so doing, provided an extreme example of the fourth characteristic the inconsistency verging on instability evident in both the short-term fluctuations and in the longer term cycles of boom-and-crash.

The Importance of Timber to the State Trade Economy

From the time timber export data is first available, there is no year without mention of timber and only two early years in which the value of timber exports did not exceed 1% of the total annual export earnings. Its persistence is thus indisputable. However, its importance is less clear cut. Timber has not, with the exceptions of 1853 and 1854, been the leading or even the second major export by value. Thus it does not share the prestigious position achieved by wool and grains in the early history of the colony, nor the later importance of fruit, minerals and vegetables (see Fig. 3.1).

For most of the century covered in the study, five export categories were responsible for more than three-quarters of the total trade. Of these five, wool, minerals and fruit were the major staples of Tasmania. Grains and timber have made a significant contribution over this period, and are considered to be important secondary stables. All other exports must be classified as being of minor significance when the assessment is made over such a long time period.

FIG. 3.1 TASMANIA'S PRINCIPAL EXPORTS 1830–1930 BY PERCENTAGE



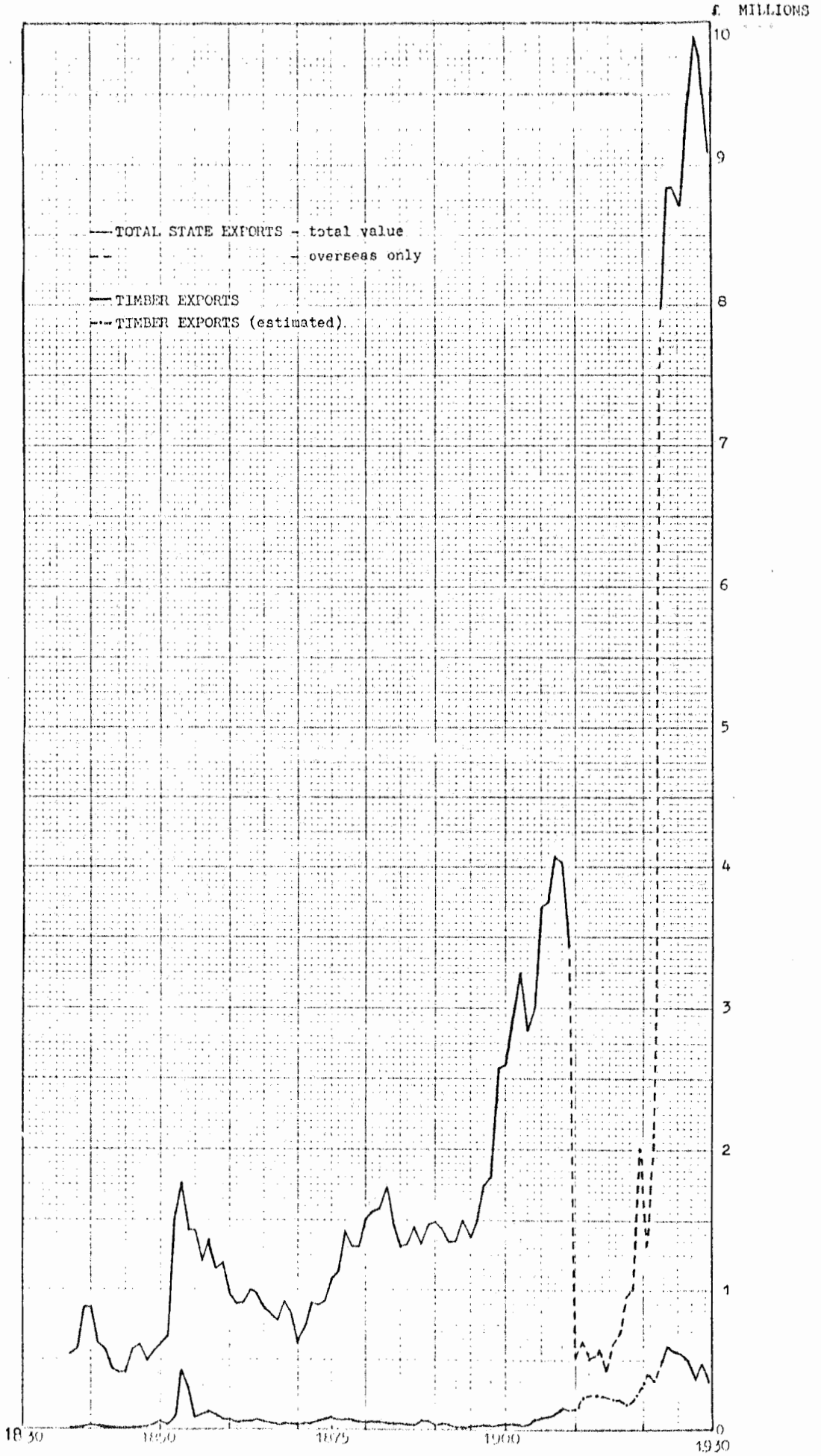
The importance of timber is confirmed by its annual ranking among exports from Tasmania. A cross-sectional sample of four consecutive years approximately thirty years apart is shown in Table 3.1. The sample includes two periods when timber is at a very low ebb (see Fig. 3.1 and Appendix 1B). Although rankings are partly obscured by the various systems of export categorisation, the lowest ranking to which timber fell is thirteenth (1902). Timber was twelfth in rank in both 1843 and 1903, but the usual position for timber has been between fourth and ninth.

Evolution of The Tasmanian Economy

Exploitation of the resource base endowed by nature provided the basis for the export trade of Tasmania. The secondary and tertiary sectors were modest in scale. There seem to be only three periods when finished manufactured articles form a significant proportion of the export trade. These include the 1830's when Tasmania acted as the gateway to Australia and as an entrepôt supplying Port Phillip and South Australia; the 1840's when imported merchandise unsaleable in the depression years was re-exported; and finally after the First World War with the beginning of large-scale manufacture of woollen textiles for the Australian market.

Processing of the raw materials was, in general, limited to the minimum required for transportation. Jam, a product of some importance at the turn of the century fits this pattern as the process was essentially one of preserving a highly perishable product such as raspberries thereby enhancing its transferability. Some of the major industries developed in the twentieth century could perhaps be viewed as exceptions though the zinc industry had been attracted to Tasmania by another resource, cheap hydro electric power, that could not be exported from the State except as the energy input into refining zinc ingots.

FIG. 3.2 TOTAL AND TIMBER EXPORTS, TASMANIA, 1830 - 1930



Resource development and depletion are revealed in the changing sequence of major staples (Fig. 3.1 and Appendix 3). From the early 1830's until the 1880's wool was paramount earning between one-third and one-half of the total. The other major staple of the 1830's was whale oil, a product which reached its zenith both in absolute and proportional terms in this decade. In 1839-1840, the trade economy boomed (Fig. 3.2). Exports of wheat revived following the crop failures in New South Wales, and the demand for livestock, foodstuffs, manufactured goods and timber increased with the settling of Port Phillip and South Australia. British demand for wool, whale oil, whale bone and bark was maintained. In these two years, wheat prices were high. Wheat and other grains earned nearly £250,000 representing a quarter of the total export value, slightly exceeding that for wool. The crash came toward the end of 1840. Demand shrank quickly from the combined effects of an Australia-wide depression and developments on the mainland such as the *overlanding* of cattle from New South Wales to Victoria. Throughout the 1840's, wool (approximately 40%), grains (20%) and whale oil (10%) were the mainstays of the economy. The other principal exports fell into three groups; re-exported manufactured items like clothing, haberdashery, ironmongery and oil man's stores, other consumer items - tobacco, tea, sugar and spirits, and thirdly locally produced primary produce including timber which revived during the decade.

The special demands of the gold rush era shaped the 1850's. It was a time of expanded trade opportunities and growth of new staples. For a brief two year period, timber equalled wool as the major staple. During the remainder of the decade, grains rivalled wool for supremacy, whale oil recovered from the labour shortages of the early fifties, timber maintained an average of 8% giving it a new importance, and fruit and vegetables emerged as a new staple.

Roughly equivalent in export value during the late fifties, timber and fruit and vegetables subsequently diverged. Fruit and vegetables continued to expand and were to challenge the position of grains during the sixties whilst timber suffered a slight decline but continued to be important.

These same commodities continued to dominate into the 1870's, but new resource development was forcing change. Minerals rapidly replaced wool as the first ranking export and numerous other primary products, e.g. hops, hides, livestock, vegetables and bark showed considerable growth. Others went into decline. Whale oil virtually disappeared in the later years of the decade following depletion of the fishing grounds, and at the same time, South Australian grain captured the interstate market at the expense of the Tasmanian producers. Timber experienced a boom during the mid-1870's and like fruit and wool maintained its importance throughout most of the decade.

By 1900 minerals were pre-eminent. Earnings from copper were now of paramount importance with silver, tin and gold in subsidiary positions. Wool and fruit vied for second and third rank. Timber was at its lowest ebb - a mere 2% of the total.

A marked contrast is apparent in the pattern for the late 1920's. After seventy years of depending almost entirely upon slightly processed raw materials, manufacturing had now achieved some importance.* Woollen textiles and refined zinc were the major contributors. Continuity also existed. Wool, fruit, jam and vegetables remained major staples but their positions were reversed, and timber had returned to a position of importance.

The overall contribution made by timber to the total export earnings of Tasmania has been close to 5% (Appendix 1A). The variability of the trade has been considerable. The mean of the annual percentage for timber is 4.8% with a standard deviation of 3.8. However such summarizing techniques hide the periods when timber exports were particularly significant. The annual export value was significantly higher than average in the two decades from 1850 to 1870 and in the early

* See for instance, *Statistics of Tasmania* 1922, Appendix A, page 6

TABLE 3.1

TIMBER AND OTHER PRINCIPAL EXPORTS OF TASMANIA

RANKED BY VALUE

RANK	1841	1842	1843	1844	1870	1871	1872	1873	1900	1901	1902	1903	1927/28	1928/29	1929/30
1	Wool	Wool	Wool	Wool	Wool	Wool	Wool	Wool	Copper	Copper	Copper	Copper	Zinc	Fruit	Zinc
2	Whale Oil	Flour	Grain	Grain	Fruit	Grain	Grain	Grain	Tin	Silver	Silver	Silver	Fruit	Zinc	Fruit
3	Flour	Whale Oil	Whale Oil	Whale Oil	Grain	Fruit	Fruit	Fruit	Wool	Wool	Potatoes	Tin	Wool	Wool	Woollen Manufactures
4	Grain	Grain	Flour	Flour	Timber	Timber	Whale Oil	Timber	Silver	Fruit	Fruit	Fruit	Potatoes	Potatoes	Wool
5	Live Stock	Clothing	Ironmongery	Clothing			Timber		Fruit	Tin	Wool	Potatoes	Hides & Skins	Woollen Manufactures	Copper
6	Timber	Potatoes	Clothing	Ironmongery					Gold	Gold	Tin	Wool	Woollen Manufactures	Hides & Skins	Potatoes
7		Ironmongery	Whalebone	Tobacco					Potatoes	Potatoes	Gold	Gold	Timber	Copper	Jam
8		Live Stock	Tobacco	Whalebone					Hides & Skins	Jam	Oats	Hides & Skins		Timber	Timber
9		Timber	Hay	Bark					Sheep	Hides & Skins	Hay & Chaff	Jam			
10			Live Stock	Timber					Jam	Oats	Jam	Oats			
11			Potatoes						Timber	Timber	Hides & Skins	Hay & Chaff			
12			Timber								Bark	Timber			
13											Timber				

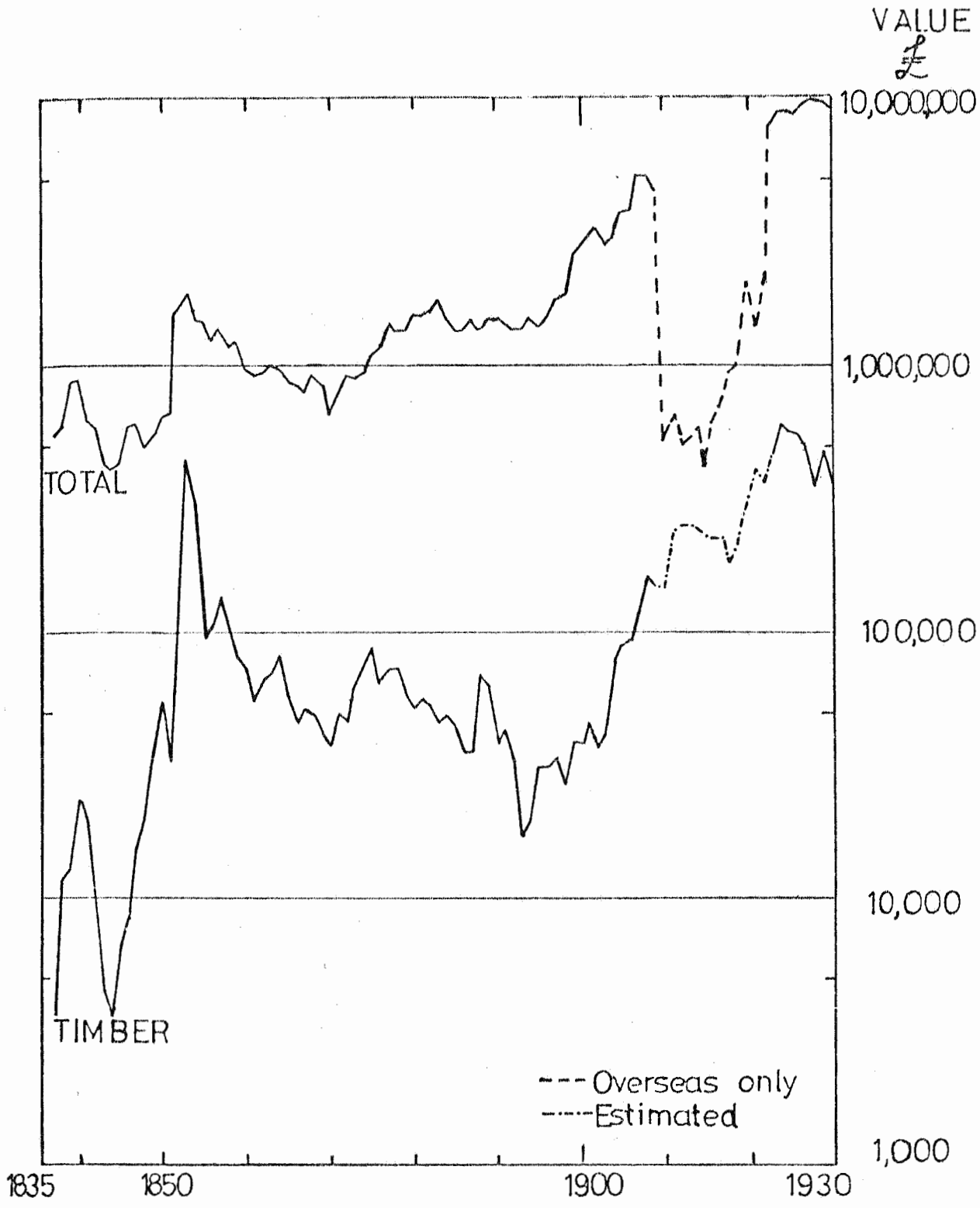


FIG.3.3 RATES OF GROWTH

TOTAL AND TIMBER EXPORTS, TASMANIA.
(Semi-logarithmic scale)

decades of the twentieth century confirming that timber has been an important and persistent contributor to the trade economy of Tasmania.

Development of the Tasmanian Timber Trade

The total value of State exports exhibit a slow, steady growth over time (Figs. 3.2 and 3.3). The pattern is interrupted by peaks related to the settling of Port Phillip and the Victorian gold rush, and by troughs related to the depression of the early 1840's and the long depression 1858-1872. Mining activity cushioned the effect of the depression of the nineties. It was anticipated that Federation would be beneficial to trade and the growth rate of the total State exports did increase after 1898, but this was due initially to a rapid growth in copper exports, not a freer access to a larger market. Increasing inflation in this later period also contributed to the trend but its effect was not determined.

The evolutionary pattern shown by the timber trade was not so simple. While growth was great overall, it was not steady. The outstanding, isolated, high peak of 1853 and 1854 was not approached nor surpassed for over sixty years. A long-term, unsteady decline lasting almost half a century occupied most of these intervening years. The consolidation of the timber trade was slow in coming, not being achieved until the post-Federation era.

Minor cycles are superimposed on the long term trends shown in Fig. 3.4. This cyclic pattern of boom-and-bust corresponds fairly closely to externally generated events which by affecting the demand for timber had repercussions on the timber trade.

The Hesitant Start, 1804-1852

The impression frequently given of the early years of the Tasmanian timber trade is of isolated, spasmodic, single shipments.

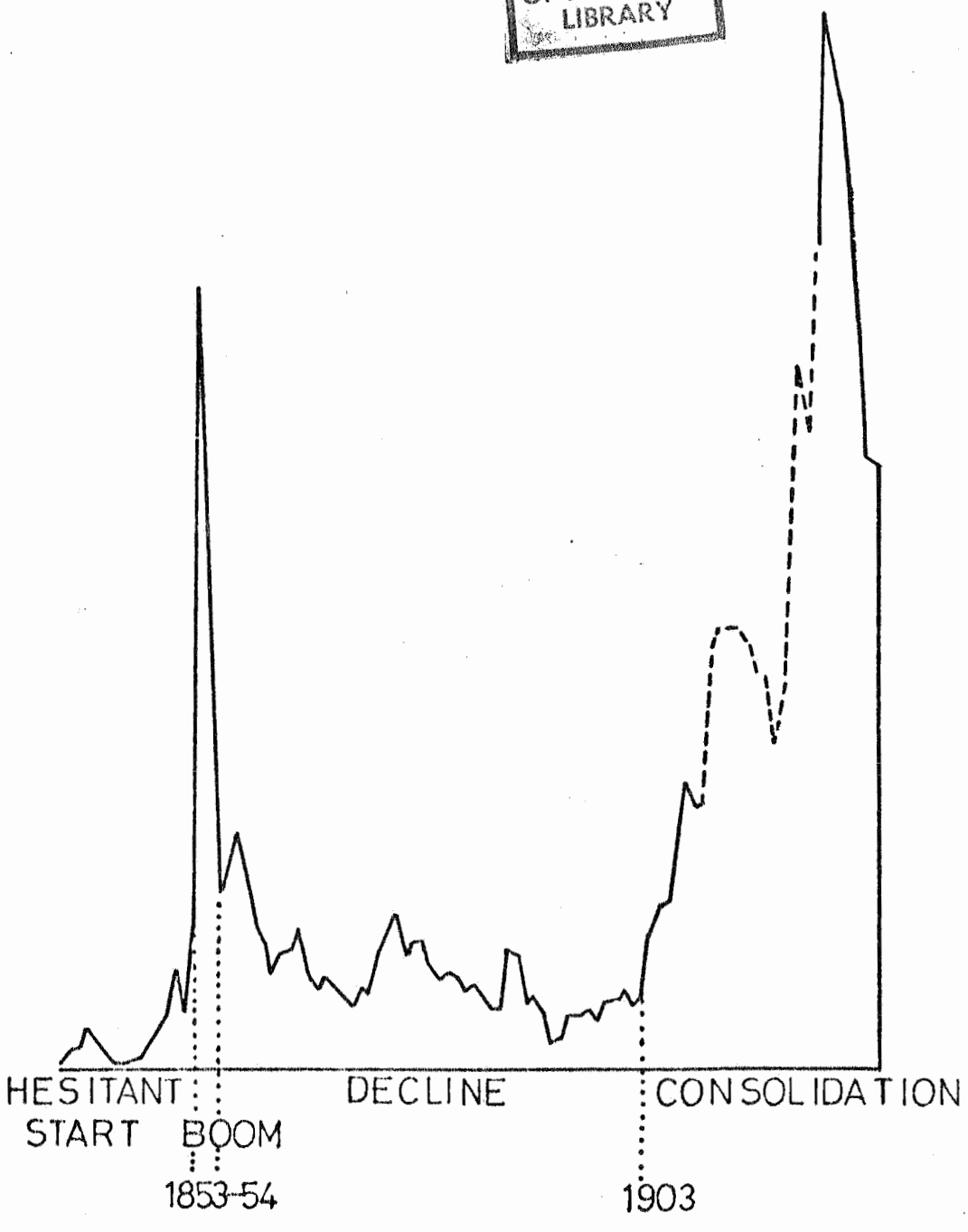


FIG.3.4 THE TASMANIAN TIMBER TRADE 1830 - 1930

However, a table of the quanitites of Tasmanian commodities imported into the United Kingdom, 1827-1831 (Bischoff, 1832, 57), reveals a more familiar picture - frequent but inconsistent exports of timber. The amounts are small, the peak being 1039 cubic feet in 1830 followed by 53 cubic feet in 1831. If Huon pine was the chief export then this irregularity may be related to its reduced availability about that time. Descriptions of the North-West Coast in the 1840's (Fenton, 1891) confirm the existence of a small but relatively regular timber trade based on supplying split hardwood timber to Adelaide and Melbourne.

However the beginning was slow and hesitant. Initially the Australian market was non-existent with Sydney being self-sufficient in timber, and the capital necessary for speculative exports of timber overseas was in short supply. In the United Kingdom, an import tariff until repealed added to the cost of the long voyage. The news of trial shipments from New South Wales to India was most unpromising (Steven, 1969, especially 286). The first known Tasmanian initiative was delayed, possibly stifled, by bureaucracy (H.R.A. III, II, 44-5, 26th October 1813) while a small shipment to London of hardwoods and other local produce prior to 1822 was a financial failure (H.R.A. III, IV, 434, 19th October 1822).

Other isolated examples of initiative include the loading of 200 tons of timber from the Huon on the London-bound S.S. *Lady Harcourt* in October 1829, a single, highly profitable shipment of blue gum to China in 1845, and the export of timber worth £6,000 to the Californian gold rush in 1849. These shipments were not followed up. Neither were the two Admiralty requests - for spar timber in 1820 and for blue gum suitable for shipbuilding in 1833. The reason for the last is stated unequivocally as *bad timber, not true to specification which consequently condemned the Colony for many years ... (Forestry Handbook*, 1928, 11).

Less spectacular but of great significance for pioneering settlers, and for local merchants diversifying their trading base was the development of the timber splitting industry along the forested coastal fringes of the South and North-West. Fenton (1891, 61) noted that while agriculture was depressed in the 1840's there was *still much vitality in the timber trade.*

The techniques for extracting and transporting this heavy, bulky commodity were evolving, but unless water transport was available, hardwoods did not travel far at this stage.

The pattern of local usage was mirrored in the export trade. Pine was preferred, yet despite the demand remained a minor item due to the problems of accessibility. Hardwoods were held in lower regard yet by the late 1830's they formed the bulk of the small but increasing exports of timber. The growth of the inter-colonial timber trade followed the growth of the settlements in South Australia and Victoria. The strength of the demand in both the mainland and overseas markets reflected similar factors, namely the supply of substitutes, customer preference and the diffusion of information.

The Timber Boom, 1853-1854

The Victorian gold rush of 1851 which enticed the able-bodied men from the farms and forests of Tasmania also caused the exodus of builders and carpenters from Melbourne. With so little demand left for timber, the export trade slumped. Then as the number of successful diggers leaving the gold fields for the relative comfort of Melbourne grew, so did the demand for building materials. But as Fenton (1891, 160) had noticed in February 1852, timber was in very short supply. The Melbourne prices had been low, but rose dramatically as demand outstripped supply. In 1854, the returns to Tasmanians on timbers exported in that year were as follows; palings averaged 24/6 per 100, posts and rails 85/- per 100, shingles 35/6 per 1000,

general purpose sawn timber 17/6 per 100 feet while board and planks reached an average of £8 per 100 feet (compare with later prices in Appendix 20). Actual prices were more extreme. Palings bought at the water's edge at Forth for between £1 and £5 per 100 realized prices ranging from £2/10/- to £8 per 100 in Melbourne (Fenton, 1891, 160-161). The big discrepancy reflected the lack of market information on the part of the seller. Intense demand and high prices popularized the timber trade and encouraged investment in the industry.

The total value of timber exports rocketed with the phenomenal increase in prices. The effect on an averaged value is shown in Table 3.2. The basis for the quantitative conversion of the variety of measures used in the export statistics is unknown, but assuming consistency, it enables a comparison to be made. If the quantity exported indicates consumption, and the earnings indicate price then the two aspects were out of phase. Thus, similar earnings in 1852 and 1855 were made possible by very different prices.

Table 3.2 Tasmanian Timber Exports during the Gold Rush Era

YEAR	QUANTITY SUP. FT.	VALUE £	AVERAGED VALUE PER 100 SUP. FT.
1851	9,350,000	32,726	7/-
1852	25,573,000	89,507	7/-
1853	50,647,000	443,161	17/6
1854	34,417,000	306,857	17/9
1855	15,000,000	98,546	13/2

Forestry Handbook, 1928, 13

The general structure of the timber industry from 1851-1854 is not known, and the following is based on the recollections of one Northwest Coast pioneer. Fenton, en route to Ballarat, foresaw the conversion of Melbourne's tent town into conventional weatherboard housing. Discontinuing his journey, Fenton returned to the Northwest

Coast to prepare for the timber rush. Others may have done likewise. Buying timber already split into palings, he organized transport to tidewater. Once the great demand began, the lack of communication and transport ensured a very slow start to the trade from the Forth and Leven Rivers. However the news of waiting cargo spread and three hectic months followed as ships came in quick succession to transport half a million palings sold at the inflated prices cited earlier.

The profits for the timber merchants and shippers were high, but so were the risks. Fenton's last contract was to supply for three months an unlimited quantity of palings at the moderate price of £2/10/- per 100. During these three months the market price fell to 8/- per 100 as the first of the *immense quantities* of timber ordered from the U.S.A. arrived. The timber continued to arrive in such quantities that the market was glutted. The consequence was a drastic reduction in the volume of timber leaving Tasmania during 1855. But one man's experiences may not be typical. Table 3.2 portrays another version of the same event - an abrupt sustained price rise following an immense increase in demand and preceding unmatched slumps in demand and price.

The Period of Unsteady Decline, 1855-1902

Depression, slump and *decline* are words commonly applied to the timber trade throughout this period, but the situation was not uniformly gloomy. The remainder of the 1850's and most of the 1870's were good years. External events played an important role in the shaping of the Tasmanian timber trade. The growth in Victoria created by the gold rushes led to moderate but sustained demand for timber until the mid-1860's. However, prices fell at the start of the depression in 1858, and remained low until the depression ended in 1872. The combined effect of low prices and falling demand is apparent in the lowered export values. The one bright spot was the New Zealand trade which expanded as a result of the Otago gold rush.

Problems beset the evolving timber trade. These problems of transport, tariff barriers, competition, marketing and security of supply were as important as the fluctuating external demand in determining the development of that trade.

Resource exploitation was dependent upon the provision of land transport. The surveyor, W.A. Tully (J.H.A. 1862; 14, 8-9) noted that there was little point in opening a market overseas by advertising the special properties of Tasmanian timber when inadequate transport into the forest prevented a continuous supply and ensured high costs. In these circumstances, it was pointless to respond to the invitation by an Indian company to tender for railway sleepers. As Tully saw it, such trade was possible only if the government assumed responsibility for the construction of tramways. Cheap and efficient transport would also eliminate another factor bringing Tasmanian timber into disrepute. Most of the timber products were processed in the forest and carried out along rough tracks. As the distance of cartage increased, many splitters economised on transport costs by lightening the load. Palings became thinner, and these were then seen by consumers as an inferior product. Some of the proposed tramways were built, but the government also economised and the impact was much less than was anticipated. Land transport was to remain a perennial problem.

Tariffs became common-place during this period. In addition to raising revenue, protectionism was viewed by most of the colonies achieving self-government as the best economic environment within which their own industries could grow. Tasmania was quick to impose import tariffs upon particular items. The public response to such proposals was also quick; among the numerous petitions was one from the Huon:

> *That a Tax upon the importation of Cattle and Sheep is peculiarly objectionable to your Petitioners, a great portion of whom are dependent on the neighbouring Colonies for a market for their timber; for they cannot avoid foreseeing that retaliatory measures, affecting the staple export of the District will be taken by the Parliaments and Governments of those Colonies interested in the export of Cattle and Sheep to Tasmania."*
>
> *J.H.A.* 1856, 48.

By 1870, the Tasmanian statistician was complaining about the detrimental effects of *The War of Tariffs* on Tasmanian exports, and later cited Victorian officials who proclaimed the success of their tariff barriers:

> *The import of sawn timber from Tasmania has almost entirely ceased since the imposition of protective duties ...*
>
> quoted in *Statistics of Tasmania, 1875, xi*

Customs data partly invalidates this claim. Victoria imported between £5,000 and £10,000 worth of sawn timber annually from 1870 to 1878 despite the tariff, and when palings and decorative timbers are included, the Victorian market accounted for one-third of the timber exports during the 1870's. This was about the same proportion as New Zealand. South Australia was the third major market. Intercolonial tariffs persisted until federation and regardless of their effectiveness, were perceived as a major obstacle to trade. The decline of the Tasmanian timber trade during the 1880's cannot be attributed to their more vigorous application. The import tariffs applied equally to West Australian jarrah, American softwoods and Tasmanian hardwoods. An example of the tariffs and markets for Tasmanian timber is seen in the following table.

No. TASMANIA. No.

ELECTRIC TELEGRAPH.

Words 10 Station Beaconsfield

Charges 1/5 Date 2-12-87

Operator's Initials [illegible] Time 1-5

RECEIVED the following Message:—

From

Station Mount St Valentine To Name Mr O Reeves

Date 2-12-87 Address Beaconsfield

Time 12-15

Timber wanted badly how did sheep sell. reply prospects timber

Signature and Address of Sender. Robinson Burns & Spanner

Table 3.3 Import Tariffs in 1889
on sawn timber per 100 sup. ft.

	Vic	N.S.W.	S.A.	Qld.	N.Z.
Tariff	1/6 to 7/-	3/-	1/6	1/6	2/-, 4/-
Tasmanian Exports, 1889, Blackwood	£10,781	579	1,628	-	9
Other	£18,574	439	11,890	-	3,860

Statistics of Tasmania, 1889, 192-4, 204

During the 1880's, the Tasmanian timber trade definitely lost ground in its former markets. The New Zealand trade halved, probably due to the competition from the newly opened forests of the North Island. The South Australian, and to a lesser extent, Victorian markets were accepting the West Australian jarrah as a substitute. In addition, the extension of railways into Victoria's own forests in Gippsland meant yet another competitor, one free of the tariff impost.

Marketing presented three different problems, the quality of the supply, the need for enterprise, and consumer bias. Marketing was the concern of individual sawmillers, and of urban-based timber merchants. Some engaged in practices prejudicial to the timber trade. Some exports were of inferior quality chiefly due to inadequate seasoning; others were passed off falsely as higher grade or of a more highly valued timber. With new and strong competition in the traditional markets such behaviour damaged Tasmania's reputation. The timber industry did not impose minimum standards. Instead, it relied heavily upon personal and continued contact between the wholesalers and the supplies as the basis for ensuring quality. Customer preference favoured softwoods, and these were becoming readily available. Inferior quality timber reinforced the prejudice against eucalypts.

The seeking out of new markets required initiative and foresight, and the maintenance of markets, both old and new, required organization. Insufficient energy was devoted towards these ends. Involvement in marketing was limited. Moreover, the lack of united action forced suppliers to compete against each other in the same markets and prevented self-regulation of standards. Sustained effort invested in developing new markets was rare; most attempts were individualistic once-only affairs. In addition, many opportunities were missed. Knowledge that New South Wales timber merchants were taking advantage of low prices for Tasmanian timber during the depressed years of the sixties by reselling at a higher price to Queensland buyers (J.L.C. 1863: 7) did not lead to greater direct action. This was indicative of the lack of enterprise of the Tasmanian trade.

Government policy, actively though unintentionally, discouraged enterprise within the timber industry in Tasmania. Many of the marketing problems reflected the smallness of most suppliers. Large scale activity depended upon the utilization of mechanical processing and the associated development of land transport facilities. Crown land was the major source of standing timber and the uncertainties surrounding tenure were crucial. Mobility evaporated with investment and sawmillers were faced with the choice of purchasing Crown land for non-agricultural purposes, which was an illegal goal, or of taking the risk that the forest in which they invested would not be selected by others. For many, the gamble was lost (Perrin, 1877b, 4). Tasmania failed to attract overseas capital.

New attitudes characterize the 1890's. Despite the poor start and the extremely low export values, this was decade of hope. The optimism sprang from improved market prospects. Overseas markets were opening up, perhaps due to an inadequate supply in their own forests as claimed in Tasmania, but more likely due to an expanding need for timber. And further growth was imminent. The proposed federation of Australian colonies would replace protectionism by free trade.

Overseas shipping links had contracted markedly by the early 1880's; steamers were by-passing Tasmania. The development of overseas markets more than ever was to depend upon the initiative of individuals; a new spirit of enterprise pervaded the industry. The craze in Europe for wooden cobblestones led to a large trial shipment. The load of sawn stringy bark and blue gum paving blocks was laid in front of the Middlesex Hospital, London in October 1894. The trial was satisfactory. Orders followed leading to a great expansion in trade from 1896 onward. Railway sleepers, both hewn and sawn, were soon in demand; this was the very trade foreseen by Tully in the 1860's. Piles, the third special purpose product sent overseas in quantity further exemplify the role of initiative in creating the demand for a particular product. The items sold on the Australian market were mostly scantlings, mining timbers, piles and blackwood.

Notwithstanding the promising market developments, the problems remained. The need for quality control intensified with overseas exports. The initial trial shipment of sawn hardwood sent to London in 1894 by a group of sawmill owners and timber merchants was subjected to an independent inspection and some of the timber was rejected as inferior highlighting the need for continued independent inspections - either through self-regulation or through government action. Hardwood paving blocks were in competition with the cheapest timber on the London market - yellow deal mostly from Norway with every single piece stamped with its classification and grade. One government official, A.O. Green (1895, x) felt that Tasmania should emulate the Norwegian marketing system for *the value of the marked timber was as well established as the price of gold.* However it was the end of the decade before a government inspection system for overseas exports was underway, and then it was optional, requiring a specific request from either buyer or seller.

Activity in the United Kingdom was not confined to marketing. The recruitment of British capital to finance new large-scale development followed the resolution of one of the problems. New legislation in 1895 guaranteed sawmillers the right of access to forested Crown land held under licence. Despite these changes, the government interest and the continued optimism, the trade continued to be described as depressed until 1901. Two reports on the industry (Counsel, 1898, Perrin 1898) reveal problems derived from government neglect. The resource base had deteriorated, the accessible timber was being cut out and the return to the government had been negligible. Others independently noted the undercapitalized and conservative nature of sawmillers. Only the inefficient marketing system escaped comment. Numerous assessments were made, and solutions proposed; some were extreme:

> *The timber trade possessed greater difficulties (than the apple trade), and to do much for it, the Government would have to take the whole management of it.*
>
> *Rodway* 1902, xxiv.

The Period of Consolidation, 1903-1930

The first decade of the Twentieth Century was a period of growth derived from a restructuring of the industry associated with an influx of British capital. Large scale exploitation became more common. At the large sawmills, air seasoning under controlled conditions and government inspection were normal procedure. For the first and only time, overseas exports exceeded the value of interstate sales. Some mills, such as the Hopetown Mill at Dover, specialized in sawn sleepers for overseas export.

The opening of the Australian market to free trade between states was a mixed blessing. The price of the Tasmanian timber in the mainland markets fell by an amount equal to the former tariff making it more attractive, a benefit also enjoyed by Western Australia and New South Wales timbers. However, the costs of production were to rise as the move for a uniform wage structure gradually reached southward to Tasmania forcing an accommodation with higher wages and shorter hours than existed previously.

The First World War interrupted the growth of the overseas export of timber. By the 1920's, the overseas markets had declined by one-third in value and represented only 7% of the total shipment of timber. This was not much better than the pattern of the late 1850's. The domestic trade had grown with the building boom of the twenties and Tasmania had little surplus production. Maintenance of overseas markets would not have been possible (Rodgers, 1928, 843).

A slump followed the boom of 1923-1926 and the industry was again described as *depressed*. The downturn in trade reflected a decline in demand for Tasmanian timber highlighting the chronic weaknesses of the local industry. The timber was not competing successfully against the increasing importations of softwoods from America and Scandinavia despite increasing federal tariffs against such imports. It was the view of the Australian Inspector-General of Forests (Lane-Poole, 1928, 98) that *no tariff wall would exclude oregon, western yellow pine, spruce and red and white baltic.* The prices of imported softwood had risen to the *unprecedented figure* of £2/8/- per 100 sup. ft. during the 1920's boom.

With the costs of production, transport and wharfage increasing, Tasmanian producers found it difficult to compete in price with imported softwoods. The perennial cry of *inferior quality* was again heard; the fault lay with the marketing system which permitted damaging practices to continue.

The Chief Forester of the A.C.T., G.J. Rodgers, undertook a survey of the forest resources of Tasmania for the Development and Migration Commission enquiring into the depressed economic situation prevailing in Tasmania. Rodger's brief covered the sawmilling industry, the feasibility of afforestation with softwoods, assessment of the area and condition of the indigenous forest resource, and the reorganization of the Tasmanian Forestry Department. The terms of reference contained direct and explicit instructions to report on ways of eliminating the *defects militating against the sale of Tasmanian timber* and the reorganization of the industry to ensure that the defects were eliminated.

The marketing system in operation during the 1920's is described by Rodgers (1928, 842-3):

> *At the present time the bulk of the sawn timber produced in Tasmania is sold in Victoria. Usually timber is placed in the hands of timber merchants for sale. These merchants sell the timber subject to their own grading on a charge of 5 per cent of the value of the sale.*
>
> *Tasmanian millers complain that owing to the absence of a definite brand on the timber they are subject to be defrauded by the merchant grading portions of their timber as second grade and selling it as first; while this practice in the case of timber which actually is second grade is ruining the name of Tasmanian timbers. Such statements are difficult to prove, but the obvious remedy is for the millers to establish a co-operative*

> *timber-yard in Melbourne, and such other centres as the volume of business may warrant.*
>
> *It certainly appears as if Tasmanian firms, possessing timber yards in Melbourne, do the most satisfactory and consistent business.*

Shipping agents were now responsible for placing much of the timber on the market, but sawmillers continued to tender independently for specialized items such as piles.

That Rodgers made any comment at all on marketing is surprising as subsequent State government action exempted the sawmilling industry and timber trade from the enquiry through the creation of the Tasmanian Timber Organization Proprietary Limited. Lobbying must have been intense, and successful; only Tasmanian sawmillers and timber merchants were eligible for membership of this organization (Rodgers, 1928, 844-846). This self-regulating organization aimed at stabilizing the industry firstly through control of a co-operative but unified marketing system, and secondly by fixing standards for quality by ensuring adequate seasoning and adequate inspection of timber for export. The timber trade was to set its own house in order.

THE CONTRIBUTION OF OTHER FOREST-BASED EXPORTS

The Tasmanian forest provided a basis for many different types of forest-based products. For instance, the eucalypt was known to have wood rich in pyroligneous acid, and twigs rich in potash and valuable 'essential' oils. The bark contained tannin, the wood a resin and the flowers were full of honey. The wood was believed to be suitable for paper-pulp. The seeds were valuable for sale abroad, particularly those from the blue gum which was in demand for afforestation and for purifying the air of marsh land. Charcoal

could be added to this list as could the less skilled product, firewood. But the pattern of expliotation was simple:

> *At present trees are cut down for the seeds alone, or for oil or for timber; but it seems certain that when the industries of sawing, pulping and distilling are combined, as well as the utilisation of the smaller trees that abound among the larger ones, the expenses of each industry will be considerably reduced, ...*
>
> Green, 1902, 38-39

The other species could also make a contribution. *Acacia* bark was rich in tannin and the wood rich in gum, the prickly box *(Bursaria spinosa)* had a fragrant resin, the Oyster Bay pine *(Callitris Tasmanica)* exhuded gum sandarach and *Xanthorroe a* a red resin useful for staining and as a varnish (Green, 1902, 38). Exploitation of these and other forest products could provide an economic basis for frontier settlement.

The bark of the black wattle *(Acacia mollissima)* was sought for its high tannin content, and though other species e.g. silver wattle *(Acacia dealbata)* were also exploited, black wattle was the basis of the bark industry. Bark-stripping required no capital and little skill. In the early days the strips of bark were exported unprocessed, but later they were ground prior to shipping. An early attempt to reduce transport costs by extracting the tannin in liquid form was unsuccessful (H.R.A. III, IV, 434-5, 19th October 1822, and Bischoff 1832, 55). The bark was in demand for tanning purposes locally, in the United Kingdom, and in other countries with cattle industry. The combination of abundance, ease of procurement and processing, and ready demand made bark an ideal commodity in the search for staple products.

Tasmania experienced two bark-booms. The first was in the 1820's and early 1830's, the second in the 188C's. A *bark frontier* may have existed in the earlier period, but relatively little is known of precise details. Itinerant gangs of strippers were active in the North-west (Fenton, 1891). The Van Diemen's Land Company derived £1,000 or over one-ninth of its annual income for 1832 from bark (Bischoff, 1832, 154). Bark-stripping preceded the permanent settlement of the Cygnet area by some of the itinerant bark-strippers. In the 1870's and 1880's, bark was an important supplementary source of income for farmers:

> *All the settlers on this East Coast of Tasmania make a great business of Wattle Bark ... Unfortunately there are no wattles on Earlham or the bark would have sold the property. The two young Campbells who bought "The Grange" have sold £1,4c0 worth of Bark from it since they purchsed.*
>
> May, 1887, 174.

Blackwood *(Acacia melanoxylon)*, another source of tannin had become a popular decorative and cabinet timber by the 1870's. Whilst timber - and bark-getting activities could be integrated, it appears that they were, in general, mutually exclusive (*Report of the Wattle Bark Board of Enquiry*, 1892, 24). Although timber merchants processed the stripped bark, the exploitation of the resource for each commodity was undertaken by different groups of people. By this time, timber-getters were fully committed to their speciality and did not engage in side-lines.

In Victoria, the cheap and plentiful supply of high quality tanning bark formed the basis of a second industry. Converting hides, many of them imported, into leather became a lucrative industry with the advantage to the Victorian economy of considerable value being added by processing. By 1890, the Victorian leather industry and

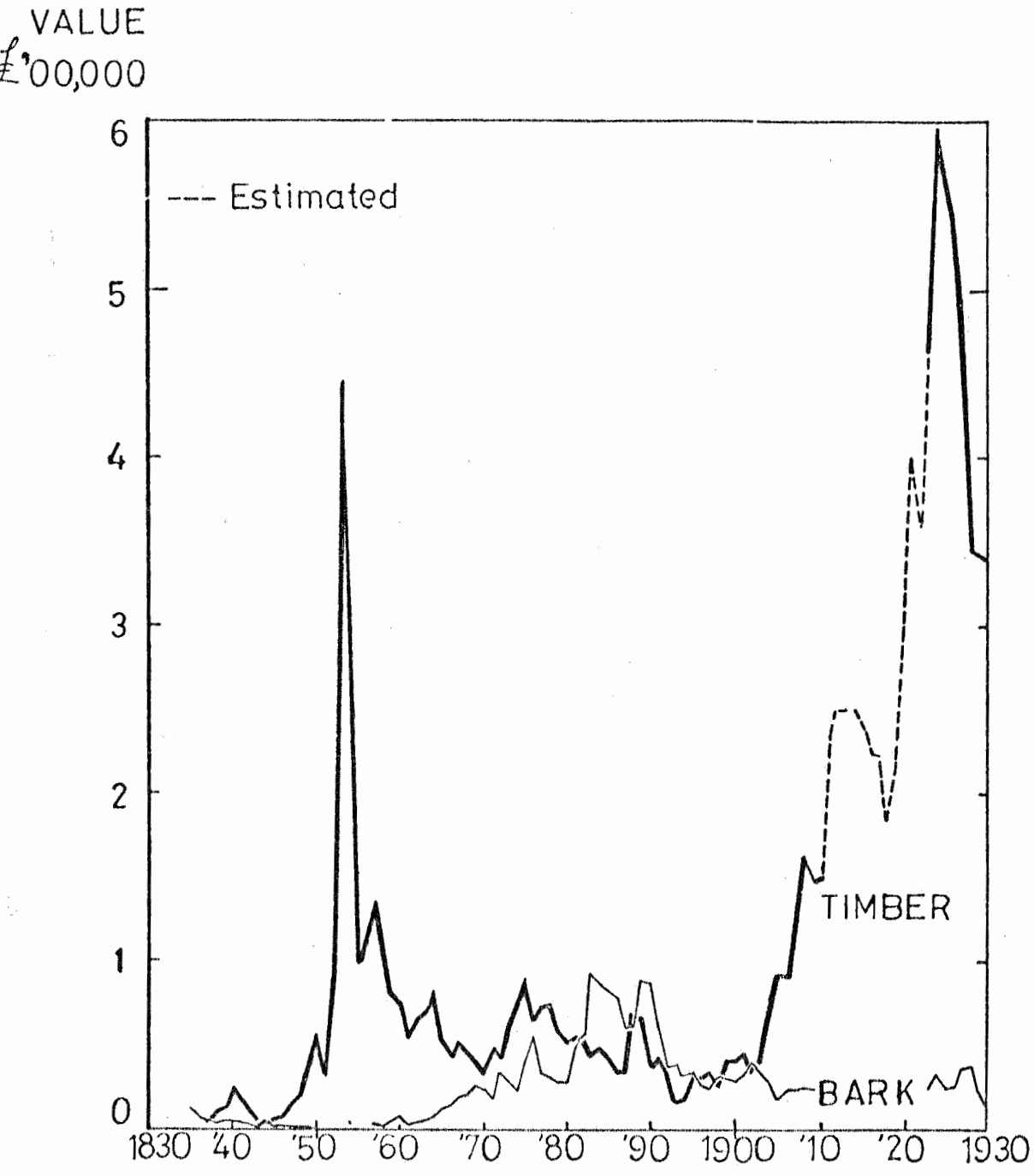


FIG. 3.5 TIMBER AND BARK EXPORTS, TASMANIA 1835 - 1930

the Victorian export trade were feared to be competing for the diminishing supply of local bark. *The Report of the Enquiry* advocated the systematic cultivation of wattles so that both industries could continue unimpeded.

In Tasmania, bark rivalled timber in importance for approximately half the period. From 1882 to 1896, the annual value of bark exports generally exceeded those for timber (Fig. 3.5). Similar values were maintained from 1897 until 1903, then their respective fortunes diverged. Bark declined before stabilizing, while timber experienced spectacular growth.

As an export earner, its overall contribution is meagre amounting to 1.2% of the total (1910-1921/22 excluded; see Appendix 1A). Of this amount, almost one-third was earned in the decade 1880-1889 when bark represented nearly 5% of the decennial total; the annual proportions varied from 3.1% to 6.4%. Even at its zenith, the annual bark value never quite reached £10,000.

The higher earnings by bark complemented a decline in earnings by timber. For nearly forty years (1855-1891), their combined earnings represent between 6 to 12% of the annual State total, a position maintained despite the increased total earnings derived from the mining booms.

Only timber and bark achieved importance. Few of the other products were developed commercially (Appendix 1B). The most persistent minor product was willow or osiers used for wickerware. Strictly speaking, willow does not belong to this study as it was derived from an exotic species, but attention was unavoidable given the ambivalence of the customs classification. In the years for which port data is available, Launceston was the sole exporter of willows. The river banks of the cultivated and Anglecised plains of the Northern Midlands were the major source of supply.

Eucalyptus oil was distilled from the leaves of freshly felled trees. One thousand pounds weight gave at least seventy ounces of oil. Blue gum *(E. globulus)* was the preferred species accounting for the southern location of the distilleries. At least one of the distilleries was integrated with the timber industry. Eucalyptus oil experienced a phenomenal rise in the 1890's (Appendix 1B). In 1894, when distillery production data appears for the first time, there were two factories operating. The annual value of production was £3,351. The industry never reached the proportions nor the organization that characterized similar expli otation in Victoria (J.& P.P.P. Tas. 1920: 18, 53-54). The decline of the trade is harder to document as different oils from several sources were frequently combined producing meaningless data. The total listed earnings from willow and eucalyptus oil to 1909 are very similar, approximately £33,000. The other minor products which include firewood and undefined 'gum' contributed even less. Thus overall, the minor products while welcome extras, were insignificant in boosting export earnings.

THE OTHER SIDE OF THE TASMANIAN TIMBER TRADE - IMPORTS

Any timber imported into the State diminishes the contribution made by exports to the balance of trade. The value of timber imports increased over the 85 years of recorded data from just under £2,000 to £69,000 per annum (Appendix 2A). However, timber imports did not share the spectacular growth achieved by the export trade (Fig. 3.6); in all but two periods (1845-6 and 1882-1906), the value of timber exports was at least twice that of timber imports. Only for fifteen years were the values close to cancelling each other. Though timber is insignificant, both by proportion* and by rank in the pattern of total State imports, its presence and persistence is inconsistent with the image of Tasmania as an area of surplus production.

* Proportion of State imports - maximum 2.2%; mean 1.1% and standard deviation 0.5.

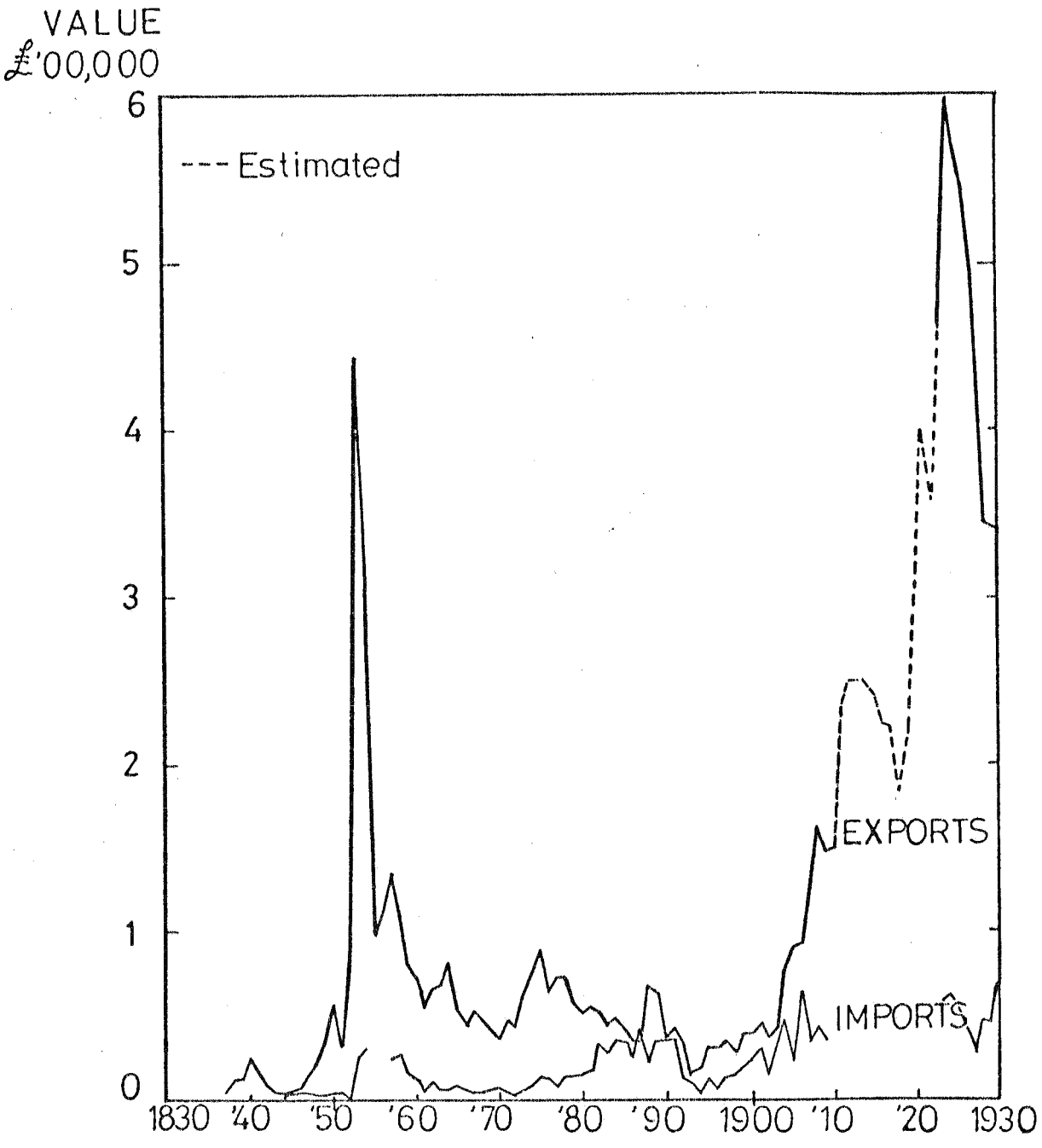


FIG. 3.6 TIMBER IMPORTS and EXPORTS
TASMANIA

A lack of self-sufficiency was the usual explanation:

> *We have in a state of nature abundant heavy, tough, hard, durable material and also an ample variety of beautiful woods in demand for cabinet and ornamental work; but the timber we want, the timber we have to import, is the soft but fairly strong, light-weighted woods that are so common in the Northern Hemisphere. These woods are the production of pines and firs, and cannot be dispensed with without considerable loss and inconvenience.*
>
> Rodway, 1899, liv.

The imports were almost entirely soft-woods. The chief sources were North America and Scandanavia. Special purpose Australasian timbers such as cedar from New South Wales, or kauri and kahikatea from New Zealand represent a small proportion of the total. The extent to which hardwoods resembling the local product were imported was insignificant. In a few cases, Tasmanian exports appear to be re-imported.

Tasmanian supplies of indigenous pines were neither adequate nor appropriate to the demand. However, to this must be added the effect of customer preference:

> *For many years, the tendency in this colony has been to substitute imported deals for our own hardwoods ...*
>
> *Proc. Roy. Soc. Tasm. 1899, xlix*

The settlers had brought with them a preference for softer timber. Softwoods were easier to use, more stable when drying out in position, and lighter to handle, and were used for many tasks where the local hardwoods were equally as suitable. Oregon was used as pit props in

many underground workings and much of the Tasmanian apple crop left the State in cases prepared in Scandinavia. In periods of prosperity, the rate of substitution increased.

Timber imports diminished the viability of the local industry. Coincidence of a slump in exports with growing imports in the 1880's exacerbated a situation already aggravated by the nature of the imports. Very little was unprocessed. At least one-quarter of the timber had already undergone considerable further processing (both reduction in size and planing) in the country of origin which correspondingly reduced employment prospects in Tasmania. Yet the requisite skills and equipment were available as timber merchants in the major urban centres specialized in the dressing of timber.

There were two reactions to the importation of timber. The negative one stressed the need to protect the local industry and saw the solution in a tariff. Afforestation with exotic pines was the other.

The Tasmanian government imposed import tariffs on timber from 1863 onward, and the Federal government continued the practice. The policy was to discriminate according to degree of processing in order to protect the local milling industry. The most processed products attracted the highest tariffs (Table 3.4). However the revenue earned from such tariffs was minor and it seems likely that the tariff was so low that it offered little protection. In addition, by 1911, there were serious contradictions in the federal tariff schedule. For instance, the aggregate of duties payable on smaller sizes of dressed timber was less than those on sawn timber yet to be dressed. The classificatory classes were regarded as being too crude. For instance, boards attracting the same tariff varied greatly in labour content; a board 6" x 3/8" had three times the labour cost of a board 6" x 1 3/8". A final example was provided by wagon wheels. Complete wheels attracted the low duty of one shilling, and the finished parts ready for assembly

were duty free. The raw material (sawn hickory pieces) were dutiable according to size (*Huon News*, Jan 11, 1911). Tariffs undoubtedly raised the price of the imported commodity but they were unsuccessful as a deterrent and failed as a stimulus to the importation of unprocessed timber.

Table 3.4 TASMANIAN TARIFF ON TIMBER IMPORTS

YEAR	LOGS	3" per 100 sup. ft.	3" per 100 sup. ft.	BOARDS per 100 sup. ft.	FRUIT CASES
1863	Exempt	Exempt	1/4	-	-
1869	Exempt	Exempt	1/4	4/2	-
1880	1/- per 100 sup. ft.	1/-	2/6	5/-	-
1891-2	Exempt	Exempt	2/6	5/-	1½d. ea.
1894	10%	1/6	2/6	5/-	1½d. ea.

NOTE: The earlier tariffs have been converted to superficial feet.

STATISTICS OF TASMANIA

Self-sufficiency in timber could also be obtained by afforestation. There were many justifications for such action besides the elimination of the financial burden of imports:

> *waste land would be put to much better use than at present, more labour would be employed, the scenery would be more pleasing, and the climatic conditions would be improved.*
>
> *Proc. Roy. Soc. Tasm.* 1899, 1.

In addition, it was believed that pines would flourish in Tasmania, therefore export earnings could be boosted by supplying neighbouring markets from Tasmanian plantations. South Australia and New Zealand undertook large scale afforestation, but Tasmania did not.

Though the impact of timber imports on the local ustry should not be underestimated, the outcome of the balance trade in the timber trade was usually healthy, and the significance this can be seen in a comparison with the other Australian states the turn of the Century (Appendix 5). New South Wales and toria, which vie for premier position, and South Australia sume d 90% or more of the growing total of timber imports. Tasmania, tern Australia and Queenland, the three least developed states, orted relatively little. It is worth noting that Western tralia and Tasmania stand alone as states in which exports eeded imports.

omparison of the Export Timber Trade of Tasmania and Western Australia

Western Australia shares many of the features racterizing Tasmania. Both are recognized as exporters of timbers ived from indigenous, predominantly eucalypt, forests. They share ilar cultural and historical influences within their timber ustries and were developing over a similar period of rising and and technological change. Whilst local demand was important, n had small local markets and both were disadvantaged by their ative isolation from the main markets of Australia and elsewhere. en this common background, a comparison of the total value of per exports from each from 1850 to 1929/30 is of value. ilarities, as well as the lack of them, may throw new light on Tasmanian timber trade. It may also provide a comparable yardstick which to judge the relative achievements of each.

A comparison of the annual earnings of each state's per trade reveals three stages, the first and last are of clear remacy by one state but involve a reversal of position. Tasmania nated the early period, Western Australia the later. The middle e of approximately fifteen years (the late 1870's to early 1890's) of roughly comparable earnings (Appendix 6, Fig. 3.8). Tasmania

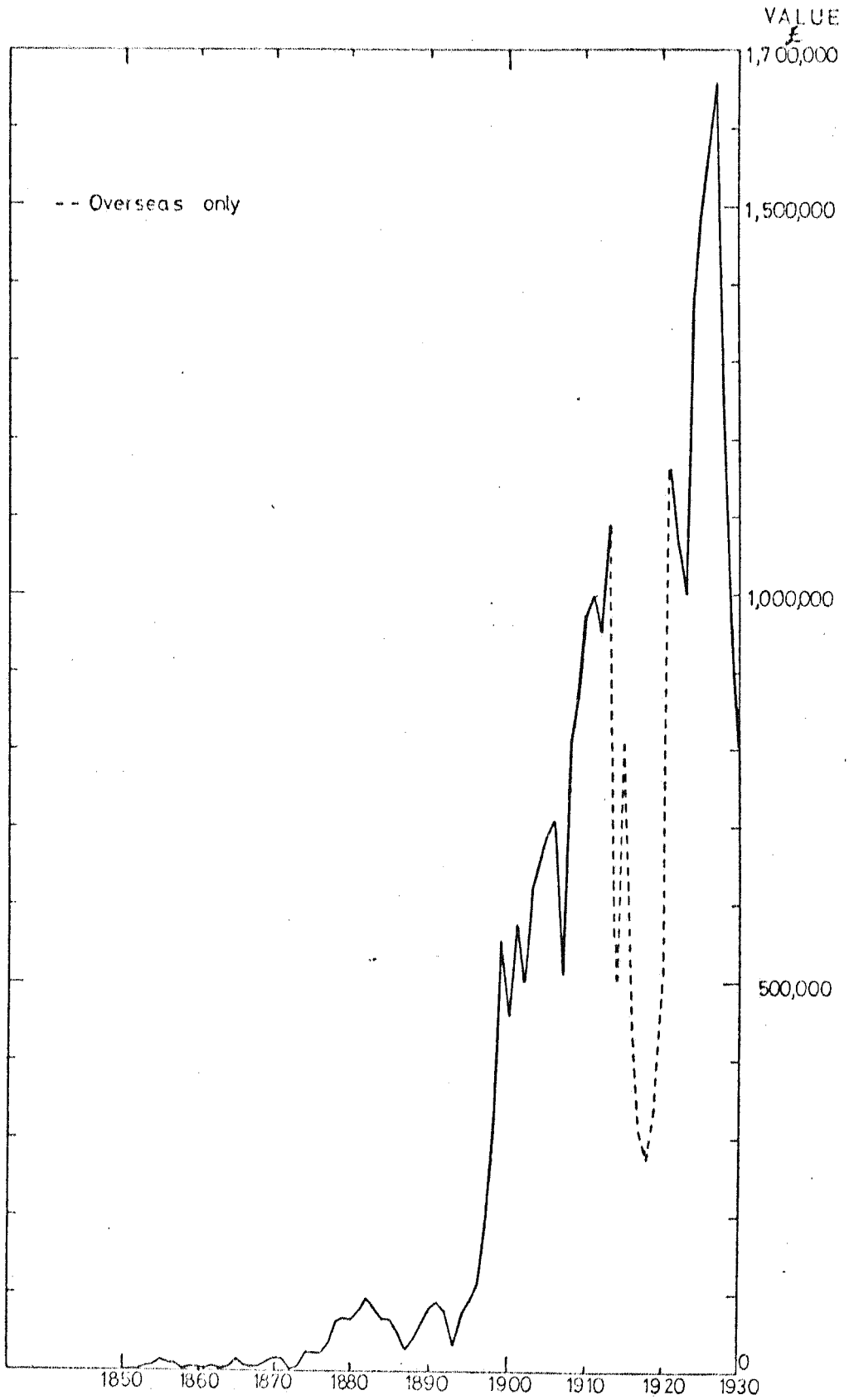


FIG. 3.7 TIMBER EXPORTS OF WESTERN AUSTRALIA, 1850 - 1930

BY VALUE

FIG. 3·8 TIMBER EXPORTS OF TASMANIA AND WESTERN AUSTRALIA 1850 - 1930 ; A COMPARISON

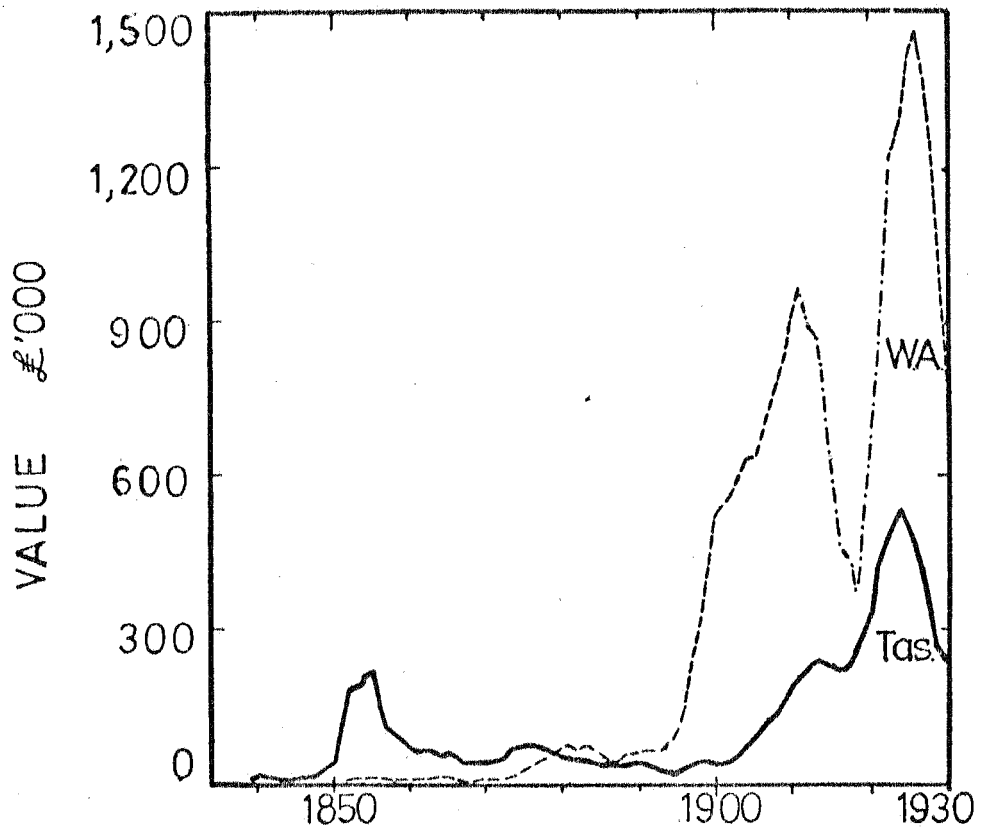


Fig.3.8A FIVE YEAR RUNNING MEAN

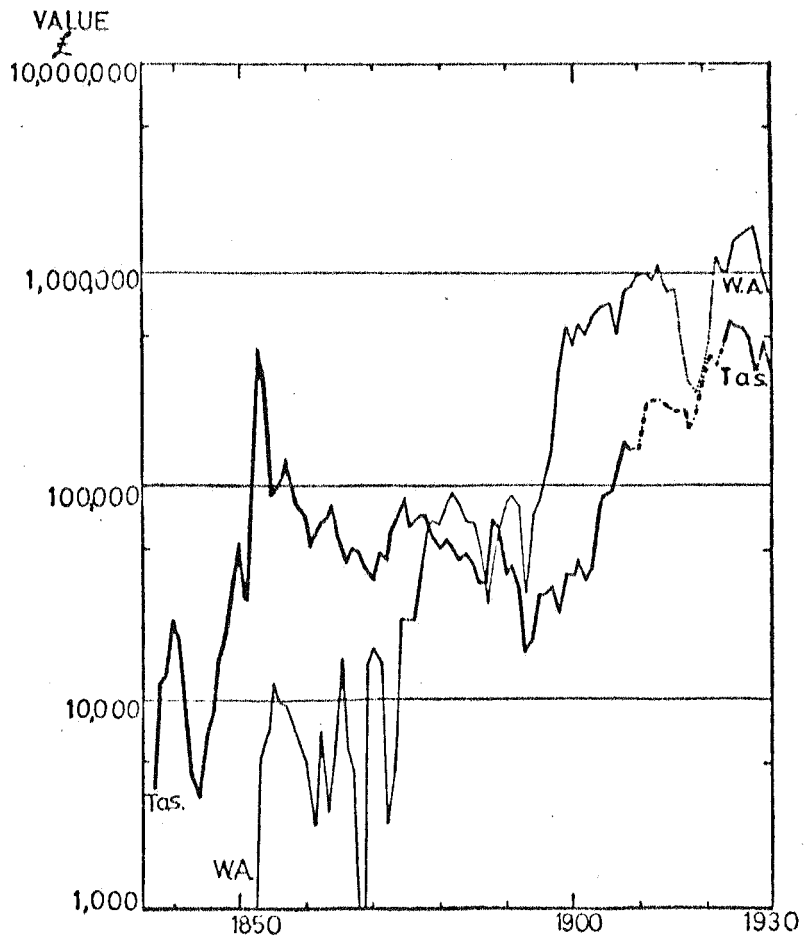


Fig.3.8 RATES OF GROWTH (Semi-logarithmic scale)

never regained the initiative. Both states peaked in the twenties, but the Western Australian maximum value (1927) was nearly three times the Tasmanian(1923/24). By the end of the study period, the difference in export earnings was reduced as Tasmanian exports did not decline as sharply at the onset of the Great Depression.

Both timber trades show substantial and sustained growth during the last thirty years, but it was neither simultaneous nor of the same order. Similar growth rates (Fig. 3.8B) which affected both industries, occurred sooner in Western Australia and lasted longer. Growth continued after *take-off* but at reduced rates and again the Tasmanian pattern is one of less certainty and earlier curtailment. A brief survey of the Western Australian timber industry based almost entirely on secondary sources was undertaken in an attempt to elucidate the factors contributing to the success of Western Australia, and by comparison, the relative failure of the longer-established timber trade from Tasmania.

One possible cause of this difference is that Western Australia possessed a superior resource base. In terms of area,and using the present situation as representative of the past, Western Australia has a slight edge over Tasmania (Table 3.5). In terms of productivity, the differences are again slight though Tasmania does have a greater area of higher rainfall forest.

Table 3.5 Comparison of Forest Areas
BY FOREST TYPE, 30 June, 1971

Forest Type	Tas. ('000 hectares)	W.A. ('000 hectares)
Rain Forest	456	-
Eucalypt:		
Productivity I	457	213
Productivity II	1,838	2,777
Productivity III	-	36
Plantations (March 1972)	26	40
	2,778	3,066

Official YEAR BOOK of AUSTRALIA 1975-6, 897

The indigenous forest of each consisted chiefly of eucalypts providing timber with similar properties of hardness, heaviness, strength, great length and moderate durability. Though the dominant species were different, each depended heavily upon few species. These were jarrah *(Eucalyptus marginata)* and from 1879, karri *(E. diversicol or)* in Western Australia and blue gum *(E. globulus)*, stringy-bark *(E. obliqua)*, swamp gum *(E. regnans)* and gum-top stringy-bark *(E. delegatensis)* in Tasmania. The last three Tasmanian timbers are marketed under the common name of Tasmanian oak. In both states, pure stands of these timbers are not uncommon but mixed stands are more usual in Tasmania and for karri. However, dispersion was not a serious problem.

Accessibility to the forest was affected by different physiographic features. The less rugged relief of Western Australia enabled easier and cheaper development of land transport, and the terrain may have been more suitable for large scale expliotation. However the coast of Western Australia provided few good harbours from which the produce of the forests could be shipped. The Tasmanian forests, on the other hand, extended to the edge of numerous harbours and estuaries navigable by the shallow draught vessels then in use. The difference in physical accesibility may have been significant in the evolution of different spatial patterns of exploitation. In Western Australia, the timber-getters moved inland with the railways from Bunbury and Busselton which in a systematic, integrated and large-scale manner fanned outwards into the extensive forested hinterland. The Tasmanian pattern was of numerous, separate, short, often rudimentary pathways from tidewater inland which restricted explioitation to a narrow coast-hugging belt of the forested area for most of this time.

Both states contained an extensive area of high quality prime forest at the time of European settlement. The physical resource endowment was comparable in area and quality though varying in accessibility. The superior performance by Western Australia cannot be attributed to an inherently better resource base.

The effect of legal accessibility and government policy
n had been so detrimental to the large-scale develcpment of the
anian timber industry was not determined for the Western
ralian case. The current status of the forested land (Table 3.6)
ests that the Western Australian government has been more fully
itted to an efficient use of its forest resources than was the
anian.

Table 3.6 Comparison of Forest Areas - BY OWNERSHIP

30th June, 1971

nership	Tas. ('000 ha)	W.A. ('000 ha)
ate Forests (a)	926	1,925
her Public (b)	721	416
tional Parks	122	34
ivate (c)	1,009	691
	2,778	3,066

Publicly owned land, permanently reserved or dedicated primarily to timber production.

Publicly owned land, vacant or occupied under lease not specifically secured for permanent timber production, but on which control of timber rests with the Crown.

Privately owned land, and leasehold land, where the Crown has no control over timber rights.

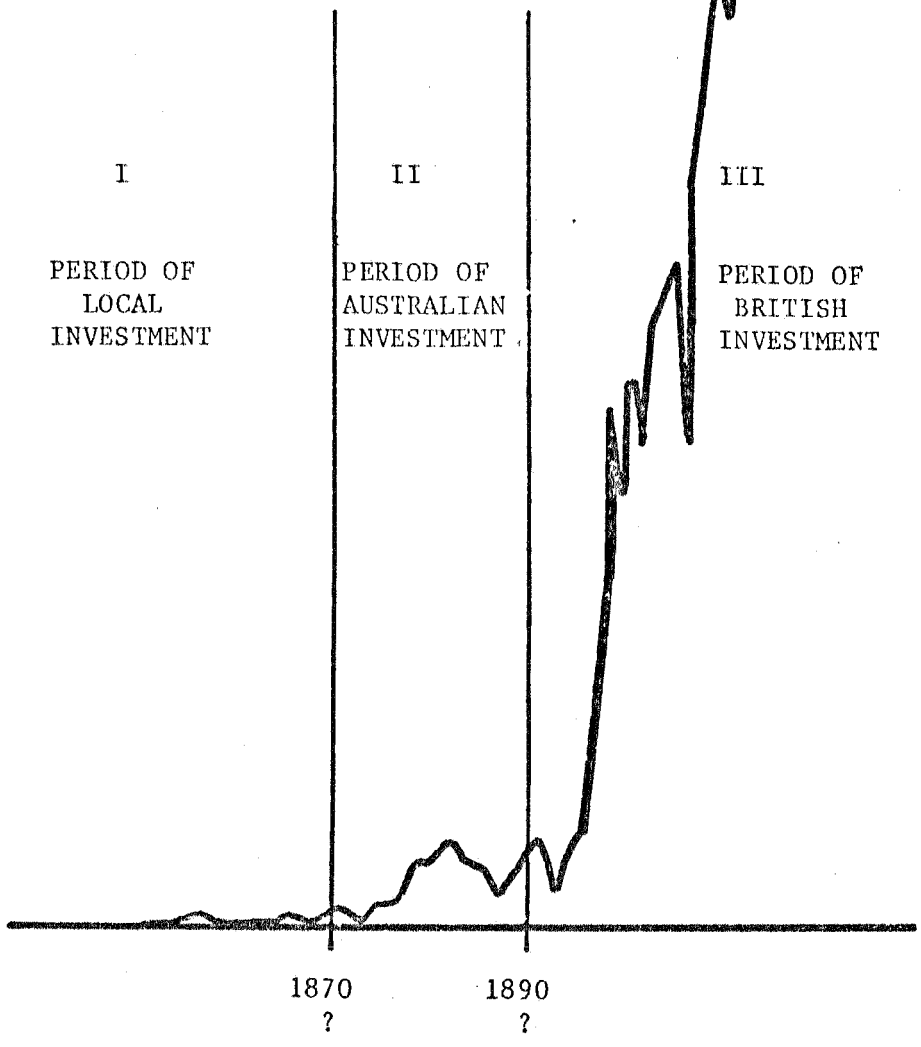
Official YEAR BOOK of AUSTRALIA, 1975-76, 897

A third possibility is that the internal structure of the
r industry was significantly different in the two states despite
hared reliance on private enterprise. Government policy,
preneurial organization and patterns of trade relationships will
ence the nature of the industry. As in Tasmania, the timber
try of Western Australia was two unequal and spatially separated
rs - in this case sandalwood and the eucalypts (jarrah and karri)
h distinguished by different organization and markets.

Sandalwood *(Santalum spicatum)*, an aromatic timber much valued by the Chinese, was the basis of the early export industry. Sandalwood was exported throughout the entire period, but reached its peak between 1870 and 1884 earning £777,000 (Crowley 1960, 62-63). The industry depended upon itinerent cutters who made their own contribution to settlement by exploring the drier margins of the forest lands in their search for this valuable but highly dispersed tree. The market was entirely overseas and the trade was organized by shipping companies and merchants.

Superimposed on the sandalwood trade is that based on eucalypts, and this became the mainstay of the Western Australian timber trade. The three periods of growth (Fig. 3.9) are related by Crowley (1960) to rising demand. The simplistic model was of rising demand leading to investment of capital which increased the efficiency and scale of expliotation to a level sufficient to meet the demand. But the Tasmanian forests were equally capable of satisfying the new demand. The model contains no mechanism to account for the selection of the Western Australian forests as the recipient of this investment though other factors were mentioned within the context of the narrative. Crowley's model of investment-generated restructuring and growth has been superimposed on the annual trade pattern. However the limits of each phase are vague.

Fig. 3.9 GROWTH STAGES IN THE TIMBER TRADE OF W.A.



Structure		
extremely small scale exploitation	small scale	large scale exploitation
Demand -		
small and localized (except for Sandalwood)	Inter-State demand	Overseas, inter-state and local (mining) demand

Prior to the 1870's the exploitation of the hardwood forests was highly localized, small scale and dependent upon man and animal power. The opening up of the jarrah forests began with the construction of the first railway lines from the coastal ports to the forest. In 1871, twelve miles were built near Busselton, and a year later a second feeder line from Rockingham to Jarrahdale was opened.

Others followed. The increased accessibility of the forest was accompanied by the introduction of mechanized processing and an increase in the scale of operation, and from 1876, exports exceeded the local consumption of timber. The complementary demand arose from government construction of infrastructure throughout Australia. Jarrah railway sleepers underlay the extension of the railways across the South Australian wheatlands, and squared jarrah poles supported the overland telegraph built between Perth and Adelaide in 1875-77. South Australia supplied a large proportion of both the demand and the investment. By 1890, the still embryonic industry remained close to the original ports and consisted of numerous mechanized but small scale units which had not yet eliminated the pitsawyers.

Unprecedented expansion occurred during the 1890's. The growth was financed largely by British capital following two seemingly unrelated events; the gold rushes to Coolgardie and Kalgoorlie in 1892-93, and the opening of overseas markets for jarrah road paving blocks, and for jarrah railway sleepers. The British financed mills set new standards in the scale of operation, mechanization and uniform quality. Amalgamation was the reaction of the smaller local companies and this enhanced their ability to compete by copying the newly formed companies. There can be no doubt of the scale of that activity. In 1900, Western Australia possessed 25 sawmills which employed 2799 workers and produced 118 million super ft. of timber annually. By contrast, Tasmania, where the influx of British capital had barely begun, had 69 sawmills employing only 833 workers (P.P.P.P., 1901, 959).

Overseas markets were of prime importance (Fig. 3.10). As was pointed out in a survey requested by the Tasmanian government into the prospects for its timber trade (Perrin, 1898; 48,8), much of this trade began with successful promotions of the Western Australian timber in London:

> *West Australia enjoys control of the London market for Australian hardwood today, deservedly, because that Colony has made special efforts to open up the trade. Pioneers such as Messers. C. and E. Miller and H.M. Davies worked for years, and spent thousands of pounds before they could overcome the conservatism of London vestries, and it is just that they and others who have successfully faced the opposition of powerful soft-woods paving "Rings", should reap the first fruits of that huge business in Australian blocks for street-paving which is sure to be built up at no distant date.*

The First World War interrupted the overseas trade but it recovered. The slump in exports from 1927-32 coincided with a compensating growth in the local market.

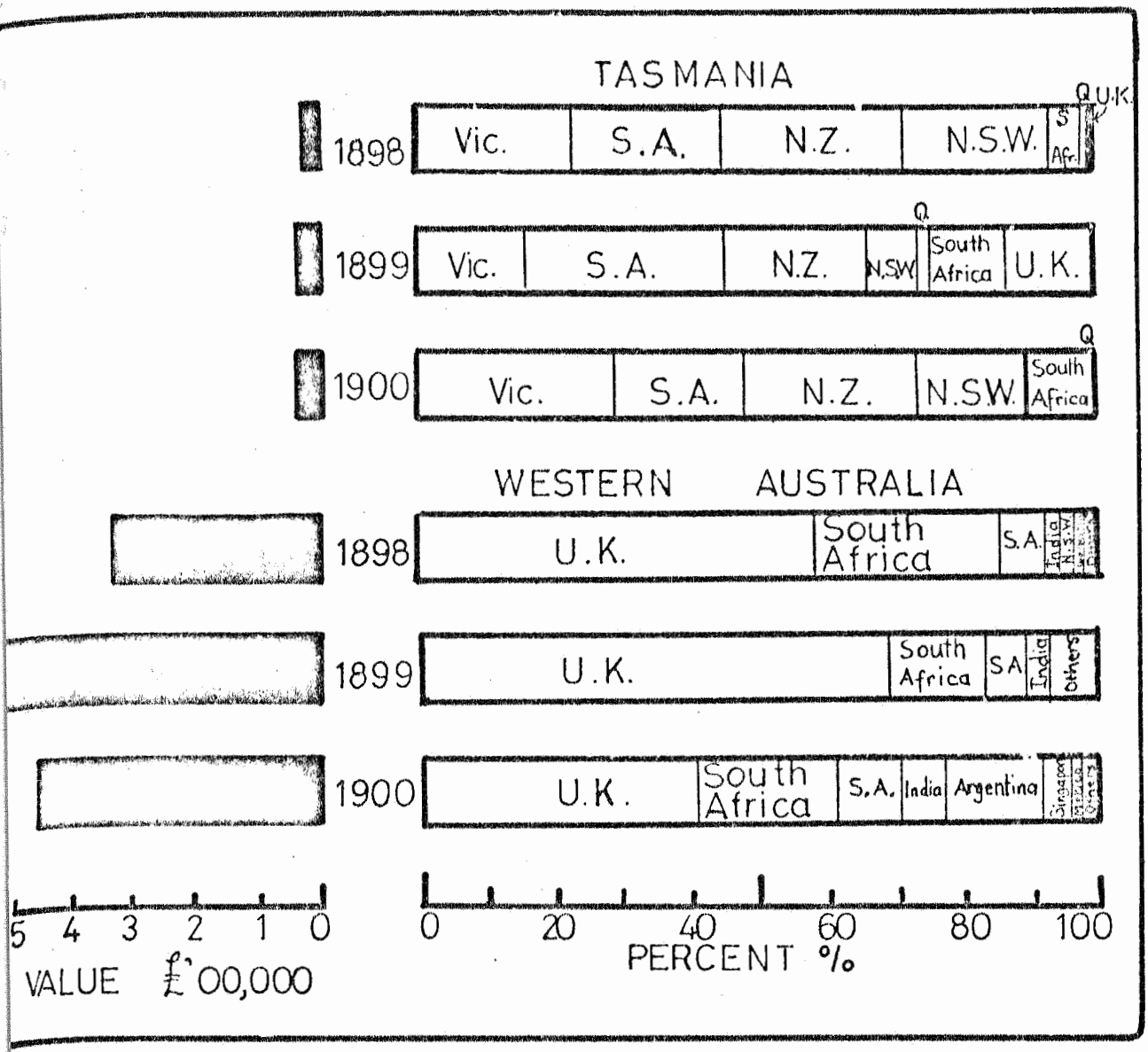


FIG.3.10 TIMBER EXPORTS OF TASMANIA & WESTERN AUSTRALIA, 1898-1900
By Destination

The expectations held of the Tasmanian timber trade were not achieved in the century covered by this study. The images of the forest held by Tasmanians and described in Chapter 2 did not accord with the performance. Tasmania did not hold the *premier position as a timber producing province among the Australian colonies,* nor was it the major supplier to Victoria. There is no evidence that timber had become *of more value than the land itself.* It was definitely not *the principal revenue-earning asset,* nor *an enormous source of wealth.* Its achievements were more modest.

Timber was an important item of trade, which in combination with the local market and any multiplier effects meant that timber was an important element in the permanent prosperity of the State. Though the reality fell short of the expectations, the achievements should not be underestimated. Timber has long been one of the principal exports of Tasmania and an important staple.

CHAPTER 4 THE NATURE OF THE TRADE

The discussion so far has concentrated on the total value earned from timber exports. Whilst totals portray one measure of the importance of the trade to Tasmania and also display the sequence of that trade's evolution, totals convey little about the geography of the timber trade. An understanding of the nature of the spatial interactions is aided by an analysis of the details which in aggregate created the total. Further benefits gained from investigation of detail are the revelations concerning the geography of the Tasmanian timber industry. The first two sections, products and ports, discuss findings pertaining to the nature and location of the timber industry; the third section, markets, looks specifically at the geography of the timber trade.

I: PRODUCTS

Timber is a heterogeneous commodity, and that leaving Tasmania was no exception. There is a confusing multiplicity of terms used to describe the products in the official statistics. The products are classified on the basis of three aspects: shape, type (species) and processing. Battens, laths, shingles, palings, posts and rails, staves and logs (round and hewn) are standardized shapes often with an implied function. The bulk of the timber leaving the State was *hardwood* or *gum*, a reference to the eucalypts. Other generic terms include blackwood, pine, myrtle and sassafras, all of which were used for cabinet and decorative purposes. The type and degree of processing is made explicit in the terms *sawn* and *dressed*. The official statistics show inconsistencies in the application of the classifications, and discrimination in that only one of several properties would be listed, e.g. hewn eucalypt logs were simply 'logs'.

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The Change in Products

Two products by virtue of their combined bulk and earnings dominate the Tasmanian timber trade. These were palings and sawn timber. Palings are boards of variable width and thickness, but of definite length (either five or six feet). 'Sawn' being known by the manner of processing reveals little about its shape, but boards, scantling and later sleepers were the most common. Both palings and sawn timber were predominately derived from eucalypt trees though a considerable quantity of blackwood was also sawn. The combined earnings of these products never fell below 80% of a decennial total.

Table 4.1 Palings and 'Sawn' as a proportion of the decennial total

Decade	%
1850's	84.0
1860's	85.4
1870's	83.8
1880's	83.5
1890's	80.4
1900's	96.1
1910's	no data
1920's	83.6

Palings and sawn boards had overlapping functions. Some palings were *very broad and stout, as smooth as a planed board and fit for any house,* while others *were of the most inferior quality, narrow, and fit only for fencing* (Fenton, 1891, 162,163). The difference between the two products arose originally from different methods of processing within Tasmania, palings being split. These two major products served the same markets at the same time, a situation quite different to that found in Ontario in the nineteenth century.

The Ontario timber trade was also dominated by two ducts, squared timber (logs) and 'boards' (equivalent to 'sawn') each product had a different market characterized by different ands at different periods of time (Head, 1975). Squared timber t to Britain. The trade grew rapidly as the Napoleonic Wars rupted the supplies from Britain's traditional source in the tic. The trade peaked in the early sixties and then slowly lined to vanish early this century. Rapid growth in the export sawn timber began during the 1840's and expanded rapidly in the 0's matching the growing demand for timber in the cities south the border. Exhaustion of the more accessible American forests uced the competition and the increased use of inland waterways canals enhanced Ontario's position. However, the concurrent e and decline of the two timber trades did not lead to a simple lacement of one industry by another due to historical and nsport factors. The squared timber industry was concentrated in awa Valley and utilized the fast flowing waters to carry the ared logs downstream. The sawn timber industry, with its ket in the opposite direction, was located as close as possible the ports on Lakes Ontario, Erie and Huron.

In Tasmania, the two major products came from the same ests and were sent to the same markets, the differences being in structure of the industry. However change is evident in the nanian trade. During the 1850's sawn timber dominated but the ition reversed in the 1860's. During the 1870's, sawn timber lved to equal the earnings from palings. From the 1880's, palings ed, and by 1920, were of minor importance whilst *sawn* forged ahead a position of pre-eminence (Appendix 19).

Change is also apparent amongst the minor products despite ssifactory problems. The initial multiplicity of items was stically reduced with the change in classification in 1903, while use of the blanket term 'sawn' hides later diversity related to demands for specialized materials. Sawn blackwood, laths and gles, logs and staves are the most important of the minor products, st battens are the least. Changes in demand affected all of them.

Many specialized products suffered a marked decline during the late nineteenth century. Shingles were superseded by corrugated iron and roofing tiles, laths by plaster board, and posts and rails by fencing wire. Trenails and shaped pieces were rendered obsolete by the new technology of steel ships.

On the other hand, increases occurred in blackwood and other cabinet-timbers, in railway sleepers, street paving blocks, piles, and staves. Picket fences were fashionable about the turn of the century. Staves used in barrel-making showed a marked revival during the 1920's. This may reflect the change to large, centralized breweries with long distribution chains. Increases in decorative timbers may be an indication of rising standards of living and a consequently greater interest in interior decoration.

The remaining specialized products depended upon the inherent properties of particular eucalypts. The hardness and durability noted by the early governors made blue gum and stringy bark suitable for use as railway sleepers and wooden cobblestones. Tasmanian sleepers aided the expansion of railway systems in South Africa, India, and China from the 1890's and Tasmanian timber paved the streets of England and possibly France. An additional property, heaviness, was important in generating demand for blue gum to construct railway wagons in Germany. The sale of mining timbers depended upon its strength.

Great length was another valuable attribute making Tasmanian eucalypts highly suitable as piles and beams. Periods of extensive port development should be identifiable through the export of piles. The Victorian and Otago gold rushes stimulated port expansion. Tasmanian piles aided these developments, as well as the extensive port development schemes of the British Navy (from Hull to Simonstown) in the 1890's and the post war extension of port facilities in Melbourne. Unfortunately most of the data concerning the newer specialized eucalypt products must be gleaned from contemporary reports. All but piles are classified as 'sawn'. Similarly hidden is the development of a variety of sawn boards and scantlings.

The above changes in fortune indicate the effect of anging demand. Most of the decline related to substitution ising from changes in fashion and technology. Some of the creases depended upon special properties whether decorative or ructural, and must have been preceded by the spread of formation. Despite these highly specialized commodities, it ems likely that *general purpose* construction timbers from eucalypt re the mainstay of the interstate trade.

e Change in Processing Techniques

The name of most timber products during the nineteenth ntury implied the method of manufacture. It is thus possible to oup items on this basis. The categories used below are sawn, lit and little modified lengths of timber (see Fig. 4.1 for a list the items in each category). The first two methods, which counted for approximately 90% annually of all timber exports, are fferent techniques for reducing a log to particular shapes or forms.

Each category developed its own set of skills, equipment d transportation patterns. Splitting depended upon the fact that me timber could be readily separated into straight, virtually rallel strips cr boards. Such trees were typically dispersed roughout the forest. Once located such a tree would be felled and ocessed on the spot. The log was cut into billets of the desired ngth, then the billet was split with a splitting knife into palings, ngles or staves ready to be carried out of the forest. Most of early sawing was also by hand. Pitsawing entailed the digging of it across which the log was placed. A long two handed saw was d, one sawyer standing above the log, the other beneath it in the . Processing in this manner was frequently at the site of the tree, as the resource was less dispersed being any tree of suitable ensions and condition, it was possible to use the same pit many es. Sawmilling based first on water power and later on steam, ernal combustion and electricity introduced spatial separation of vesting and processing, and depended upon adequate transport niques. Likewise with the movement of 'little modified lengths

of timber', though in the case of hewn or squared logs considerable processing had already occurred at the site of harvesting. Hewing required a special implement, the broad axe, and the same technique could be applied to the production of railway sleepers.

The changing relationship between the two dominant groups provides clues as to the nature of the industry. Technological change was a significant factor in this change. Splitting was seldom mechanized, and hand splitting was eventually replaced in the twentieth century by sawmilling as the prejudice against sawn palings and fruit cases was overcome. Also many of the specialized split products had been displaced by substitutes. Staves was the one product which continued to 1930 to be manufactured by splitting. The scale of exploitation increased with the changeover to mechanized processing.

The relationship between sawn and split exports (Fig. 4.1) changes in a manner roughly paralleling that between sawn and paling exports. This is not unexpected as they represent basically similar things. The paling exports are augmented by some additional items to form the *split* exports category. Sawn timber remains unchanged. During the 1850's, the two methods of processing supplied roughly values of exports though sawn did have a slight edge. In the next decade and a half (to 1878), split products dominate, though after the peak year of 1867, sawn timber began to reassert itself and by the 1880's was clearly pre-eminent, a trend continued to the present except for a short but striking recession during the depression of 1893-4 when *hard times* caused a resurgence of splitting and the temporary closure of some mills. In 1901, sales of sawn timber increased, but not as dramatically as did logs in that year.

Thus from the turn of the century, the replacement of splitting by sawing was marked, and by the 1920's the replacement of one technique by another was almost complete. Only staves and a portion of railway sleeper production had yet to succumb.

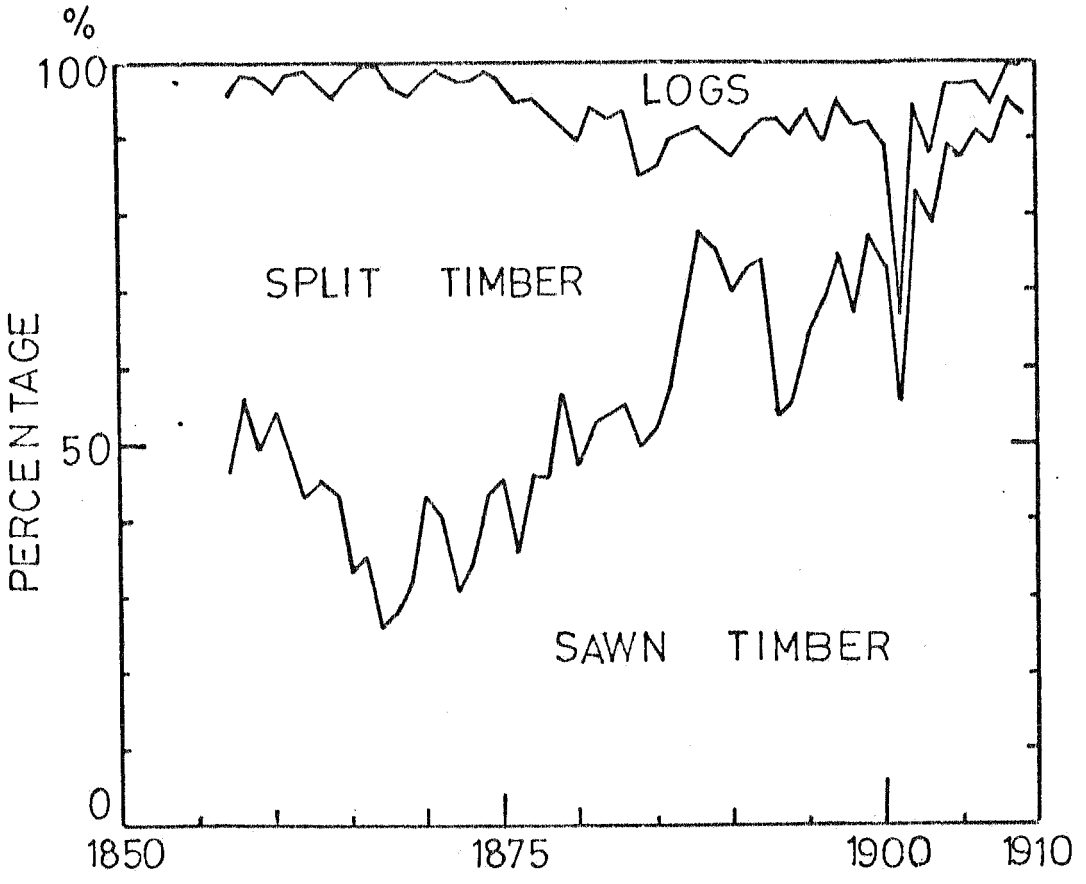


Fig. 4.1 METHOD OF MANUFACTURE

TASMANIAN TIMBER EXPORTS, 1850 - 1910

LOGS: includes logs, hewn timber, piles, beams, and pieces.

SPLIT: includes palings, laths, shingles, staves, trenails, battens, posts and rails.

SAWN: includes sawn, pickets, planks and boards.

gree of Processing

The bulk of the exported timber was only slightly sed. A small but significant amount was shipped as logs and an maller amount was exported as semi-finished or dressed lumber for use as floor boards, panelling, architraves, pickets, etc. Tasmania's timber exports in common with most exports were terized by a low degree of processing, and therefore, by a low added component.

Little manufacturing was undertaken as a general rule. ports are thus of staves not barrels, of cabinet-timbers not ts. Admittedly the increases in bulk involved in these examples have had an adverse effect upon transportability. However, more t semi-finished items such as ready-made chair pieces would have reasonable compromise. The exact value of dressed timber exports d to determine as the customs classification failed to identify and such exports until 1920/21. Pickets were recorded from 1903 9 and some dressed timber was combined inextricably with building als. The lack of a specific category indicates its insignificance. rge amount of dressed timber exported in 1909 received special n in footnotes conveying an impression that it was atypical. r, the 1920's were a time of change and dressed timber expanded to earn 11½% of the total. Quality and degree of seasoning t recorded.

It is worth noting that timber imports were more highly ed than timber exports. On this the data is clear as the import ies attempted to identify the relative levels of imported labour as tariffs were related to this parameter.

A relatively large volume of timber left the State unprocessed or after only minor modification. In this form arned lower per unit volume prices and the reduction in nt opportunities correspondingly reduced the impact on the onomy. Logs and little modified timber had been minor in the years but grew in volume as processing facilities developed at t and as transportation became easier with technological change.

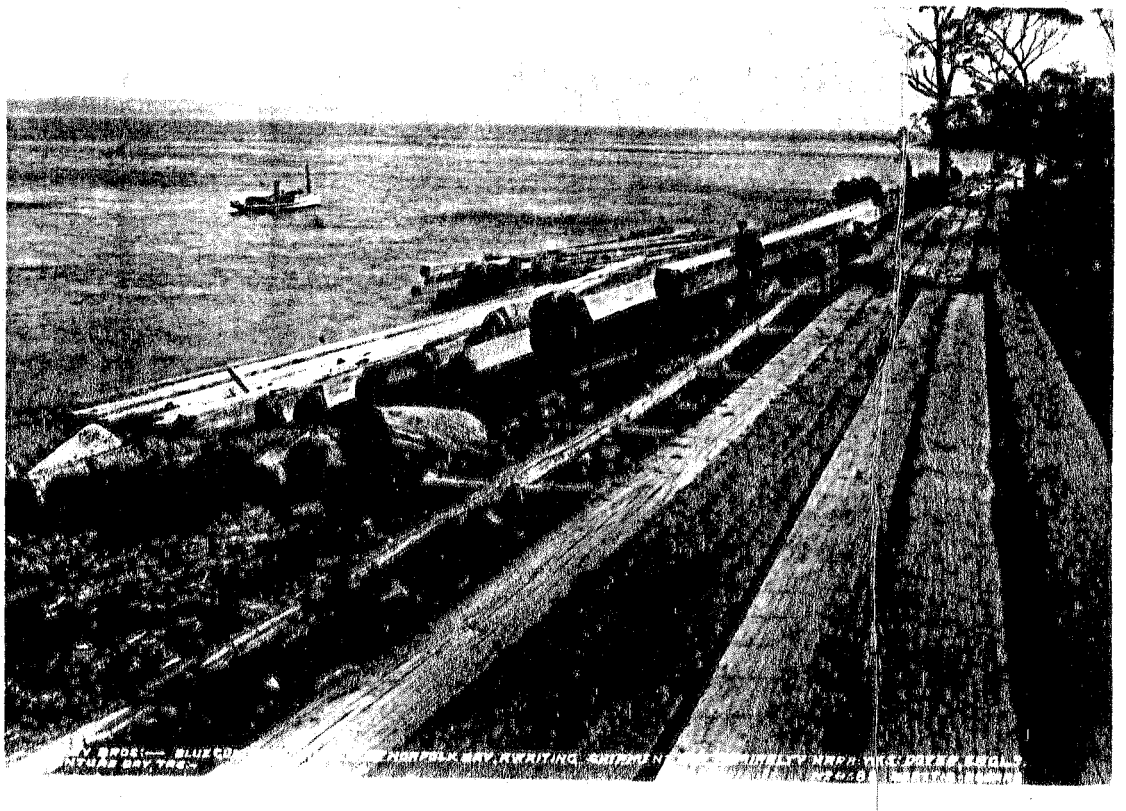
Plate 1 Preparing piles
Note the waste.

Adventure Bay.

Plate 2 Blue gum piles awaiting shipment to the Admiralty harbour works, Dover.

Prepared by the Gray Bros., Adventure Bay.
Note the rings both ends of each pile
(see page 128).

Photographs, J. Beattie, 1901.



From 1877 to 1903, the value of logs varied between 6 and 15% of the total with 1901 being the peak year. Moreover, exporting *in the log* continued to grow in absolute value though not in proportion. Logs valued at six times that of the 1901 peak were exported in 1924/25 when it represented a mere fraction of that year's total. Averaged prices indicate the relative returns on the different forms of timber. The price for logs includes that earned by higher valued piles. Eucalypt logs in 1924/25 returned an average of 18/4 per 100 sup. ft., undressed timber averaged 23/3 per 100 sup. ft., but the same volume of dressed eucalypt timber returned 44/6.

Piles deserve special mention. Although relatively unprocessed, piles - whether *in the round* or *squared* were of considerable value due to their great length. The squaring of logs for this purpose was usually wasteful. The procedure was carried out in the bush with simple tools; the log was roughly squared with a normal axe, then a broad axe was used to smooth the sides. Much of the Tasmanian supply came from the southern forests. Such lengths required special but makeshift loading techniques used under relatively primitive conditions and located as close as possible to the areas of supply.

Blackwood is another special case. As with piles, the problem of substitution by other timbers at the market was markedly less than that facing general purpose eucalypt timber. The first Conservator of Forests (Perrin 1887c: 69, 6) was firmly of the view that Tasmanian blackwood would hold its own against all competitors as to quality, cost and easy means of transit. Its competitors were teak and Victorian blackwood but these Perrin (1887c, 69:6) noted were disadvantaged:

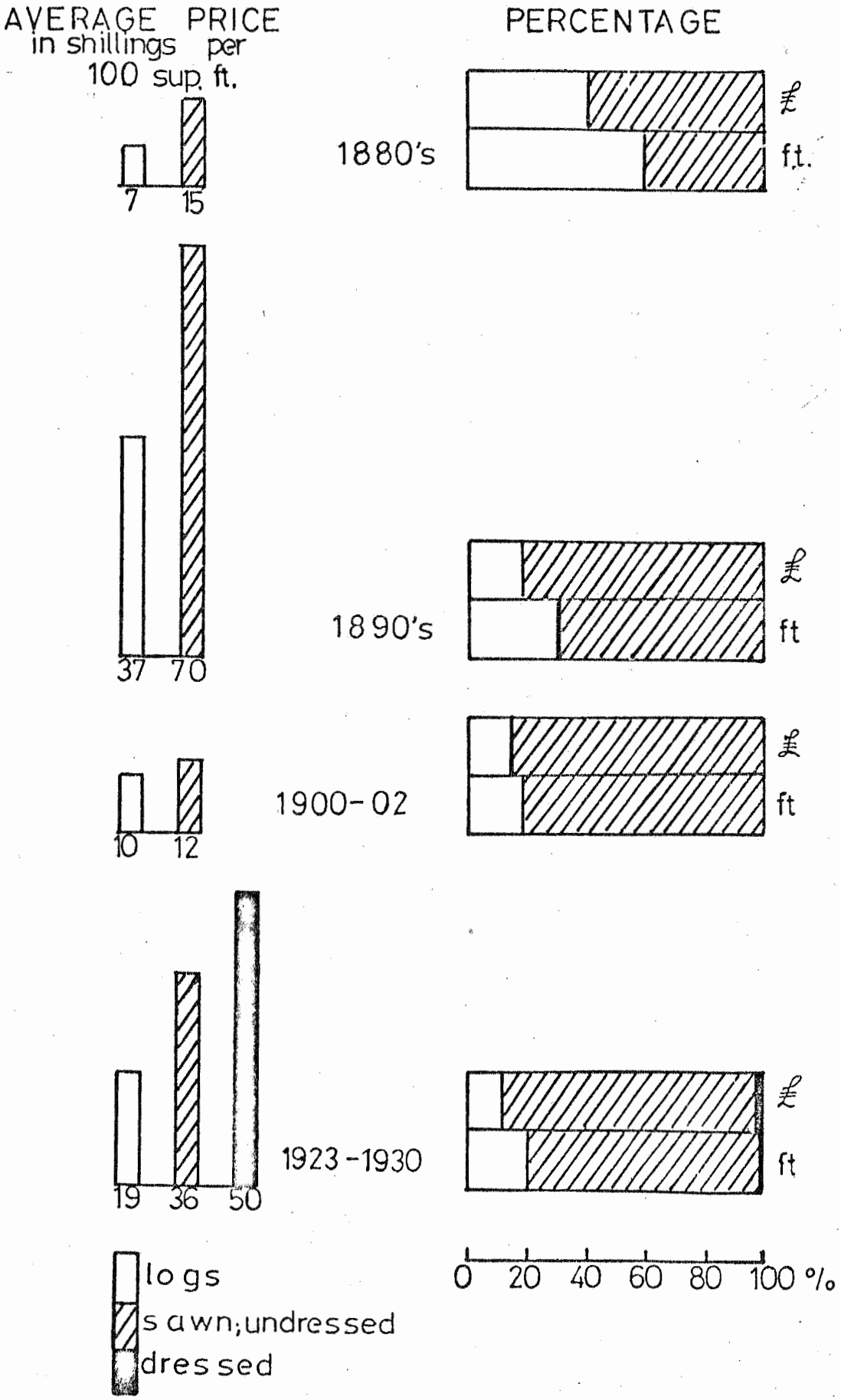
> *Teak, from the fact of its scarcity, and that it is nearly three or four times the present price of blackwood, with a rising tendency, will never supersede blackwood, handicapped as the former is with heavy freight charges.*
>
> *South-eastern Victoria certainly possesses blackwood of excellent quality, but its distance from safe*

TABLE 4.2 STRUCTURE OF BLACKWOOD EXPORTS BY PROCESSING AND VALUE

	1880's		1890's		1900-02		1922/3 - 1929/30		
	logs	sawn	logs	sawn	logs	sawn	logs	undressed	dressed
Value £	22,949	33,594	12,352	56,327	3,697	21,013	70,321	504,604	16,823
%	40.5	59.4	18.0	82.00	15.0	85.0	11.9	82.3	2.8
Volume sup. ft	6,388,844	4,466,722	659,223	1,604,207	755,850	3,419,142	7,400,000	27,958,000	675,000
%	58.9	41.1	29.1	70.9	18.1	81.9	20.5	77.6	1.9
Average Price in shillings per 100 sup. ft	7.2	15.0	37.5	70.2	9.8	12.3	19.0	36.1	49.9

STATISTICS OF TASMANIA

FIG. 4.2 DEGREE OF PROCESSING: BLACKWOOD EXPORTS



> *anchorage or navigable water presents formidable obstacles to its transit, and as a matter of course, is only obtainable at a very largely increased cost.*

Yet Tasmania had failed to capitalize upon this market advantage. The price being paid for blackwood was *ridiculously low* and the degree of local processing was minimal. Perrin could see no reason why the benefits of processing should not accrue to Tasmania.

In the 1880's almost 60% of the volume was exported as logs which netted only 40% of the value earned by blackwood (Table 4.2), and the average prices were similar to that paid for eucalypt timber. Rapid and positive reactive to criticism on forestry and lumbering were exceedingly rare, and it may be coincidence, but the pattern of the 1890's was markedly different (Fig. 4.2). The price had rocketed, and the amount of unprocessed timber shrunk drastically. But it still represented almost one-third of the total volume. The high prices may have reflected a scarcity. In the 1880's, 11 million superficial feet were exported compared with a total of 2¼ million in the following decade. The price difference meant a greater return for less timber (Appendix 9). The market appears unstable as the average prices crashed during the first few years of the 1900's. Then the data ceases. A plausible explanation is that blackwood had difficulty ccmpeting against the growing flood of imported softwoods (see Appendix 5).

During the 1920's, blackwood exports reached 36 million superficial feet but very little left the state as dressed timber. One-fifth of the total volume was exported unprocessed giving a significantly lower return. The increased prices for blackwood were probably due to a combination of renewed demand and inflation. The reasons for the relative lack of processing accorded blackwood are unknown, but it is presumed that they derive from the generally undercapitalized nature of the industry, and the anxiety and cautiousness of sellers which inhibited a true assessment of the commercial worth of their product. The growing affluence which created the large demand for decorative timbers, thereby encouraging imports, also required timber in a more finished and smoother condition. The

asmanian timber industry did not readjust sufficiently to this change n demand and the benefits derived from the increased value-added omponent largely accrued elsewhere.

II: INTRASTATE PATTERN: PORTS and HINTERLANDS

Information about the geography of forest exploitation as sought through an analysis of the port trade statistics. The onation of specialized forest use characteristic of pre-industrial candinavia was lacking in Tasmania. Those zones arose from the economic effects of distance so that the lower-value, bulkier items ere only produced close to water transport. Thus lumber was roduced from coastal forests while the forests further inland roduced charcoal, tar, pitch, turpentine and resins. These highly efined products were more transportable. Even further inland, a long erm forest fallow system termed burn-beating combined with grazing of he woodland was the basis for agricultural settlement (Saarinen, 1969; lead, 1958).

In Tasmania, distance and the availability of transport facilities were crucial to forest utilization. But the effect was to control the actual areas exploited for a similar range of constructional timbers not to encourage the production of more highly refined and valuable items better able to stand the economic cost of distance from remote localities. In spite of this uniformity, spatial differentiation derived from specializations are discernible in the trade data. Differences in the resources base and in the level of economic development were chiefly responsible for this internal variation.

Ports and their hinterlands maintain a complementary nd symbiotic relationship. The items of trade leaving each port ill therefore be a reflection of the hinterland, and can be used to etermine the nature of that hinterland. The data is restricted to wo well separated time periods, 1857-78 and 1922/23 to 1919/30. ach period will be considered separately since comparisons are

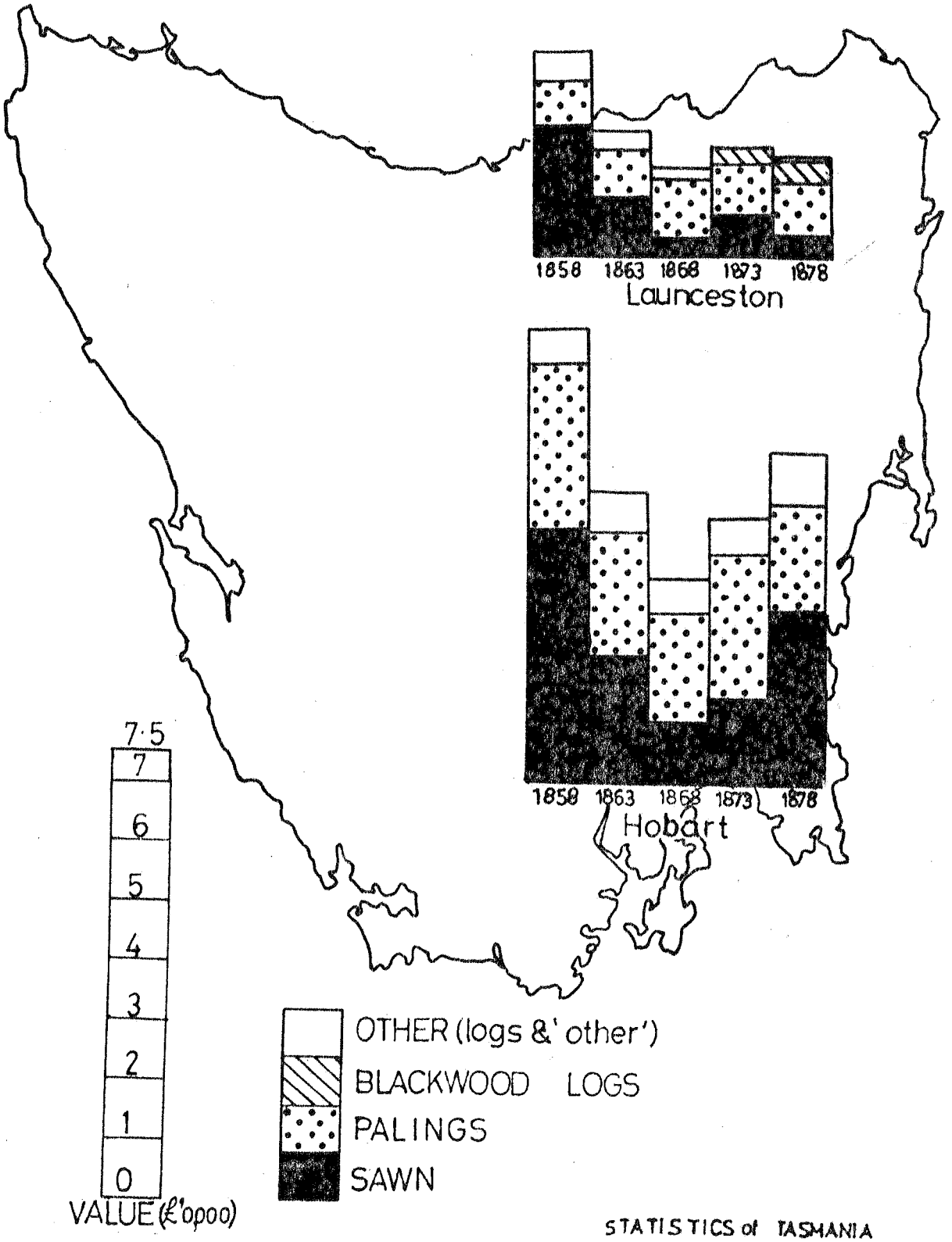
difficult due to the inherent limitations of the data. In the earlier data, markets are identified but the actual port of exit is obscured, whilst in the later period more ports are individually specified but the market information is now missing. Some supplementary data is available for the later period.

1857-1878

Two ports, Hobart and Launceston, are named but in reality these represent the port systems of the southern and the northern halves of the colony respectively. The two sets of ports showed variation in several aspects of the timber trade. The southern trade was consistently about two-thirds of the total export trade reflecting the greater accessibility of the extensive southern forest, the better developed nature of the timber industry in the south, and the abundance of blue gum, a eucalypt in great demand. The south was favoured by the numerous bays and estuaries which reduced the need for more expensive land transport by allowing shipping deep into the forested area. But this does not give a complete picture of the internal geography, because averaged prices for palings and sawn timber reveal that the northern products were usually consistently higher in price. It is not known if the discrimination was on the basis of quality, or species of timber, or of increased level of processing, or due to some other factor.

The major products of the two areas are very similar and in similar proportions (Fig. 4.3). Minor products show variation. Hobart maintained a larger selection of items especially of specialized types. Battens, and from the 1860's, laths, shingles, shaped pieces, and posts and rails are chiefly from the south. Export of staves and trenails, initially from the south, moved to the north where timber highly suitable for staves was in greater abundance. The preferred timber was blackwood which was relatively common in the north. All the exports specified as blackwood are from the north, and by 1878, blackwood (as logs and sawn timber) accounted for 22% of the value of the northern exports.

FIG.4.3 TASMANIAN TIMBER EXPORTS
Port of Origin



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Southern ports traded with more places and had a virtual monopoly on trade with more distant places e.g. Guam, New Calendonia, New Zealand. Launceston's trade was largely confined to nearest neighbours - Victoria and South Australia. In many years, Launceston supplied more timber to these two markets than was sent from the south. In both the north and the south, the pattern was of linkages being directly between the area of supply, e.g. Port Huon or the Forth River, and the market. The major ports of Hobart may have served as an assembly area for the smaller less frequent trade links to Mauritius or Guam. Huon pine was brought from the West Coast to the larger sawmills in both Hobart and Launceston. There is also a suggestion in the press of illicit exportation of logs direct to Melbourne which bypassed port clearances. The simplicity of a dominant port is lacking in the pattern of imports (Appendix 2B).

1922/23 - 1929/30

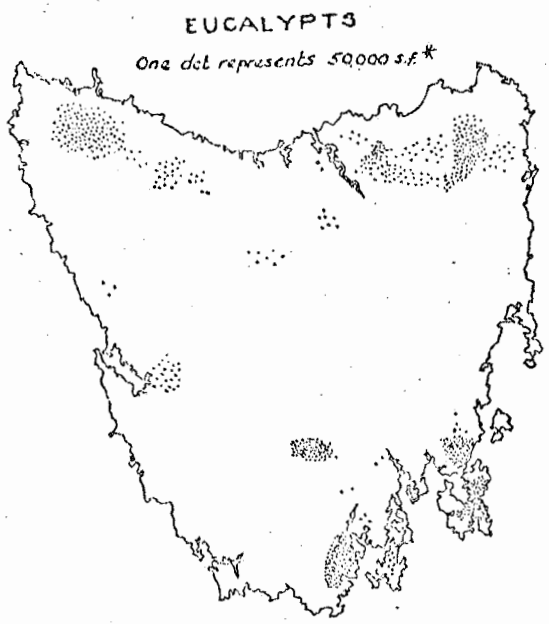
The pattern of ports is more complex, but again it can be used to represent particular parts of the State, in this case the south, the north, the northwest and the west. The first three are the major timber producing and exporting areas. The respective value of their timber exports was in the ratio of 2:1:2 though some variation did occur (Table 4.3, Appendix 7C). The south has thus maintained its dominance vis-a-vis the north, while a new area has developed in the northwest.

Other regional differences reflecting hinterland specialities are also apparent. The northwest had a virtual monopoly on stave exports. Most of the blackwood harvested from Crown land in 1928 was located in the extreme north-west (Fig. 4.4A). Thus presumably most of the blackwood logs and timber originated from the same area. The Myrtle (beech in Fig. 4.4A), another decorative timber was also a speciality of the north-west. The West coast was the major source of supply for indigenous pines, but relatively little was exported direct from Strahan. Eucalypts continued to be the mainstay of the trade and harvesting was located as close to the coast as the forest resource and other land uses allowed. The south, with its several distinct areas of exploitation, was the premier producer of eucalypt timber. The differences in resource base suggest that decorative timbers played a significant role by enabling the north-west

TABLE 4.3 TASMANIAN TIMBER EXPORTS BY PORT

Port Value Expressed as a Percentage of Annual State Total

Port of Exit	1922/23 %	1923/24 %	1924/25 %	1925/26 %	1926/27 %	1927/28 %	1928/29 %	1929/30 %	Mean Average %
Burnie	14.8	13.9	14.1	11.4	7.6	9.6	5.5	6.3	10.94
Devonport	5.1	3.2	2.8	4.0	3.3	2.4	2.6	1.3	1.40
Smithton	12.4	12.2	13.5	13.5	12.0	13.8	12.9	20.4	13.55
Stanley	7.2	9.8	9.8	9.6	9.6	9.2	12.1	9.3	9.52
Ulverstone	1.2	1.4	2.1	3.7	1.8	1.6	1.7	2.9	2.07
North-West Coast	40.8	40.5	42.3	42.1	34.2	36.7	34.8	40.2	39.48
Hobart	36.4	39.6	39.0	35.2	43.6	42.6	40.3	39.0	39.28
King Island	0.01	0.1	0.1	0.1	-	-	0	-	0.05
Launceston	22.5	19.6	18.3	22.6	22.2	20.7	23.9	20.7	21.16
Strahan	0.4	0.2	0.3	-	-	-	1.0	0.1	0.33



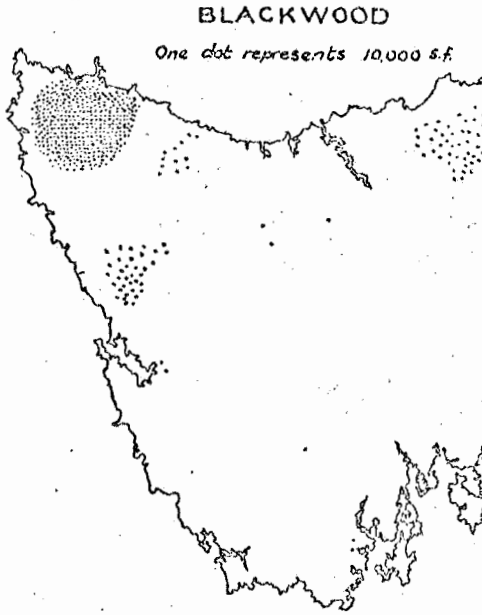
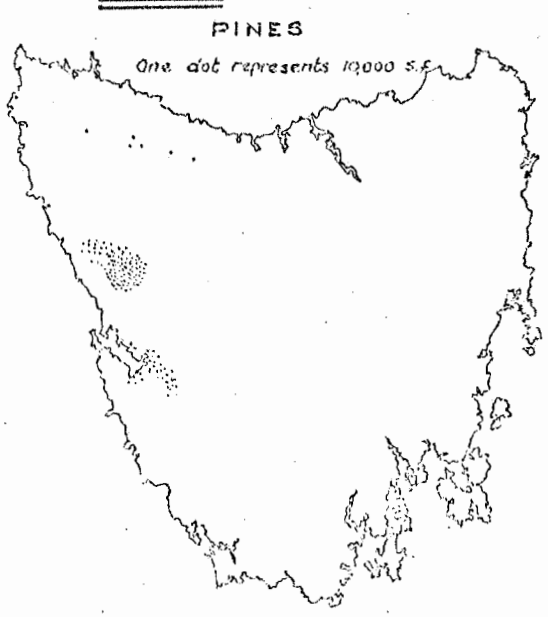
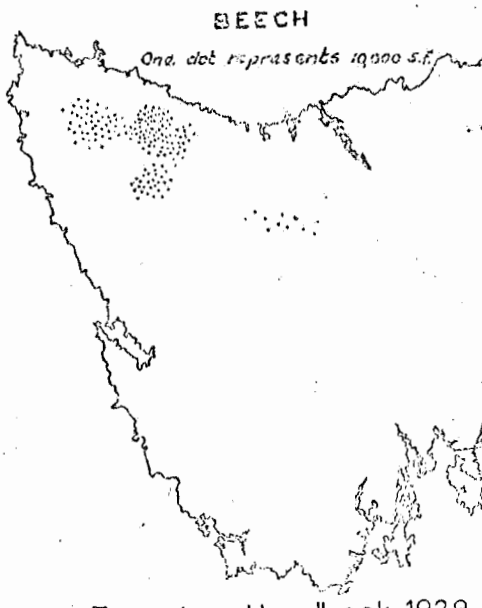


FIG.4.4A *PRODUCTION FROM CROWN LAND YEAR 26/27*





Forestry Handbook, 1928,

* Note change of scale

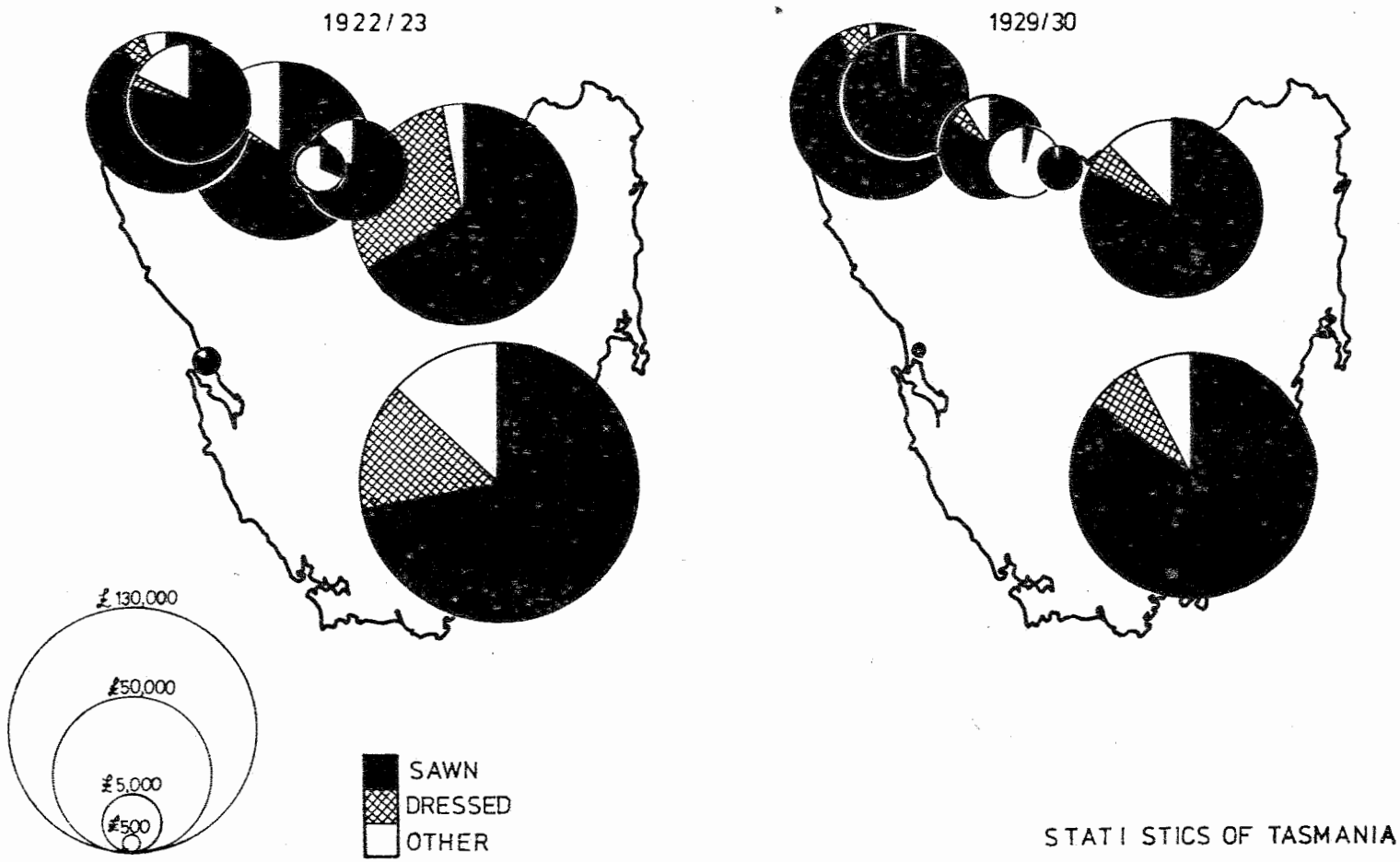
to rival the export values from the south. Unfortunately, this cannot be confirmed from the trade data.

One interesting aspect of the hinterland of the North-west Coast ports is the westward migration of timber supply areas (Table 4.3, Fig. 4.4). It is assumed that timber, a heavy, bulky low value commodity was moved to the nearest port for export. The migration arose from a combination of factors. The forest hinterland of Devonport was affected by the agricultural activity which through progressive clearance of land correspondingly increased the distances to the coast (see Fig. 4.4A), a factor of reduced importance to the west. Exhaustion of the more accessible forest in the longer settled eastern sections reinforced the impact of an active forest frontier concentrating in forest exploitation in the high quality resource to the south of Stanley and Smithton. Similar migrations of lumbering activity are known to have occurred in the south, but the single port entry for the region obscures this fact.

In terms of commodity mix, all ports but one are dominated by sawn timber. Ulverstone, a relatively unimportant supplier, has specialized in palings (45% of its exports) and logs (25%). The degree of processing was greater in the bigger urban centres. Launceston appears to specialize in the more finished items being responsible for 56% of the dressed timber. The North-west Coast contributes 71% of the least processed item, logs. If the provision of sawmilling equipment lagged behind the westward migration of extraction, this would reduce the ability of the industry to process timber from the newly opened areas. Hobart dominated in the export of palings (64%), the remainder being supplied largely by the North-west. Sawn timber was provided by the three major timber areas in proportion to their overall earnings. The two other producing areas, Strahan for the West coast, and King Island contributed less than 1% of the total State exports.

FIG. 4.4 TASMANIAN TIMBER EXPORTS

PORT OF ORIGIN



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The private register of shipping entering and leaving the southernmost ports of Tasmania (Port Huon, Dover and Southport) from 1909 to 1932 gives a clear picture of the structure of the shipping links. This was a major area of supply and timber monopolised the cargoes. The links with interstate and New Zealand ports were frequent and direct. Small sailing vessels (most being under 500 tons) came in ballast and left with sawn timber. During the period covered by the register, steamers of 1000 tons or more entered the Australian coastal trade causing some change. These stayed briefly (one or two days) and were on port-hopping schedules so that they came with a part cargo, loaded a part cargo at the several timber ports and discharged part cargoes at the destinations along their route.

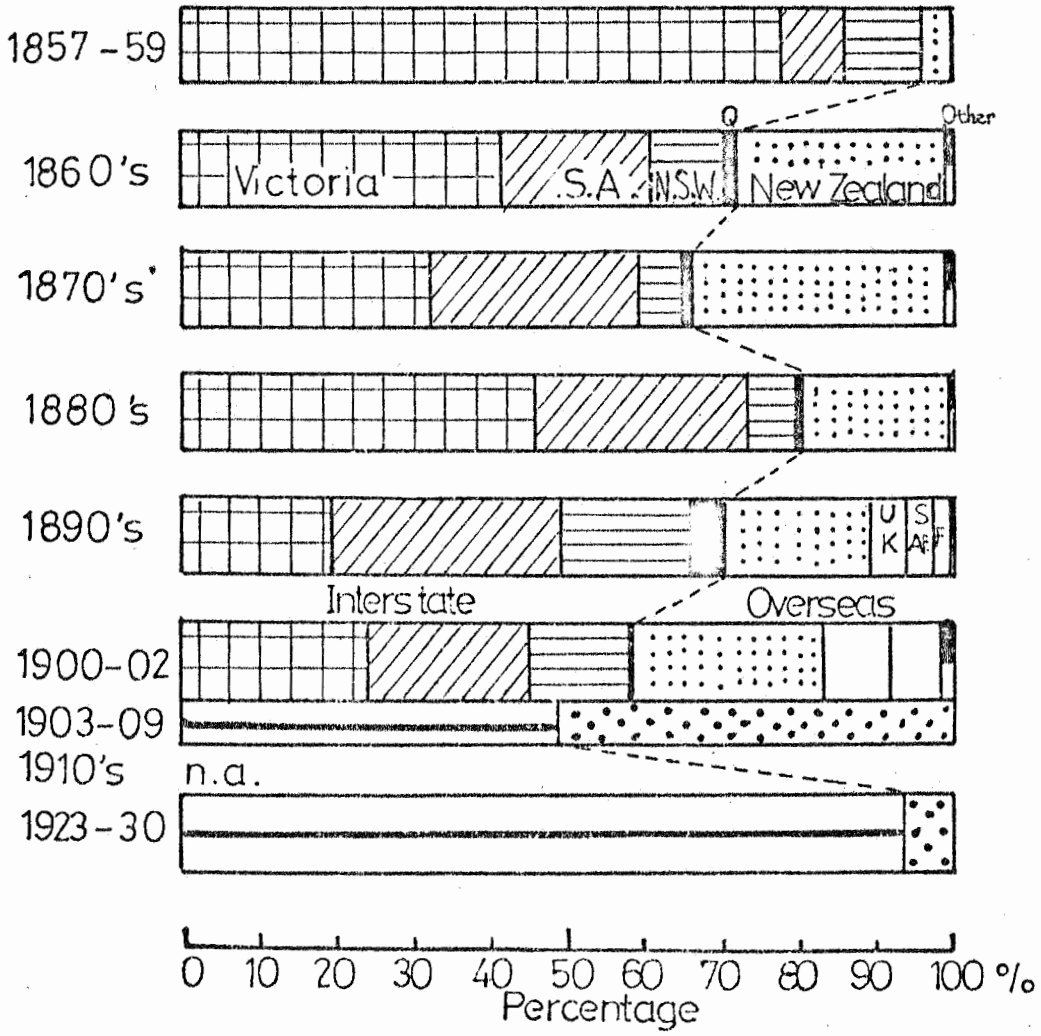
Overseas links were also direct but infrequent and diminishing with the post-War trend to assemble overseas shipments in Hobart for export. The ships were large steamers of approximately 2000 tons and a foreign crew who to judge from contemporary newspapers fascinated the locals. All came in ballast, most stayed approximately one week, and loaded only special purpose timbers, predominantly sleepers but also squared piles and beams. The ships came from various European ports and sailed to Britain, Germany, India, Singapore, Hong Kong, China and occasionally to South America.

Timber imports again lack the consistent pattern shown by the exports. At first the imports of Hobart, Launceston and the Northwest were in the ratio of 3:1:1 and while the North-west's share remained about one-fifth, that of the two major urban areas rapidly approached equality. The origin of the imports is unrecorded.

III: MARKETS

The provincial nature of the timber trade is clearly indicated by the marketing pattern. The nearest mainland states constituted the major markets throughout the entire period of study. Overseas markets, principally New Zealand were important in all but the first and last decades for which information is available. But only from 1903 to 1910 did overseas sales account for half of the total sales (Fig. 4.6 and Appendix 19). The relatively few

FIG. 4.6 Tasmanian Timber Trade: MARKETS



places importing Tasmanian timber is the second salient feature. A classification by value and persistence indicates that Victoria, South Australia and New Zealand were the major markets. New South Wales, though variable, was the fourth most important. All other destinations were minor when considered over the entire period from 1857 to 1930. There were three types of minor markets. Queensland was a small but persistent buyer; the others were short-lived. Small amounts of timber were exported between the 1850's and the 1890's to Mauritius and various Pacific Islands. The links were almost always from Hobart. The third group of minor markets, also spatially remote, imported large volumes of specialized timbers from the 1890's to the 1910's. These included the United Kingdom, South Africa, France, Germany and Asia.

The pattern of commodity flows (Fig. 4.5A and B) reveals spatial differentiation and change over time. Comment has already been made on the change in products and in the different patterns of linkages established by Hobart and Launceston. The basic pattern was for general purpose timber to be short flows showing distance decay, while all the major long distance flows were of special purpose timbers not affected by distance decay. Bark was the only forest derivative to travel far in the earliest years, but its overseas sales show a progressive decline, and by the 1920's, it was limited to interstate trade. Soaring labour costs were blamed for this decline and *inferior* bark from plantations of Australian *Acacias* in Natal, South Africa tended by *cheap, coloured labour* was supplying much of the overseas and Australian demand (J. & P.P.P.T. 1920; 13, 53). Stripping had continued to defy efforts at mechanization. It was not until 1977 that the successful trials of a reliable debarking machine were reported (South African Digest, 27th May 1977).

The timber trade of Tasmania clearly showed the effects of distance decay and of trading links so it seemed likely that the timber trade of the other Australian states would be similar. Data for the three years predating the establishment of the Commonwealth

FIG.4.5A DESTINATIONS

TASMANIAN TIMBER TRADE 1850-1930

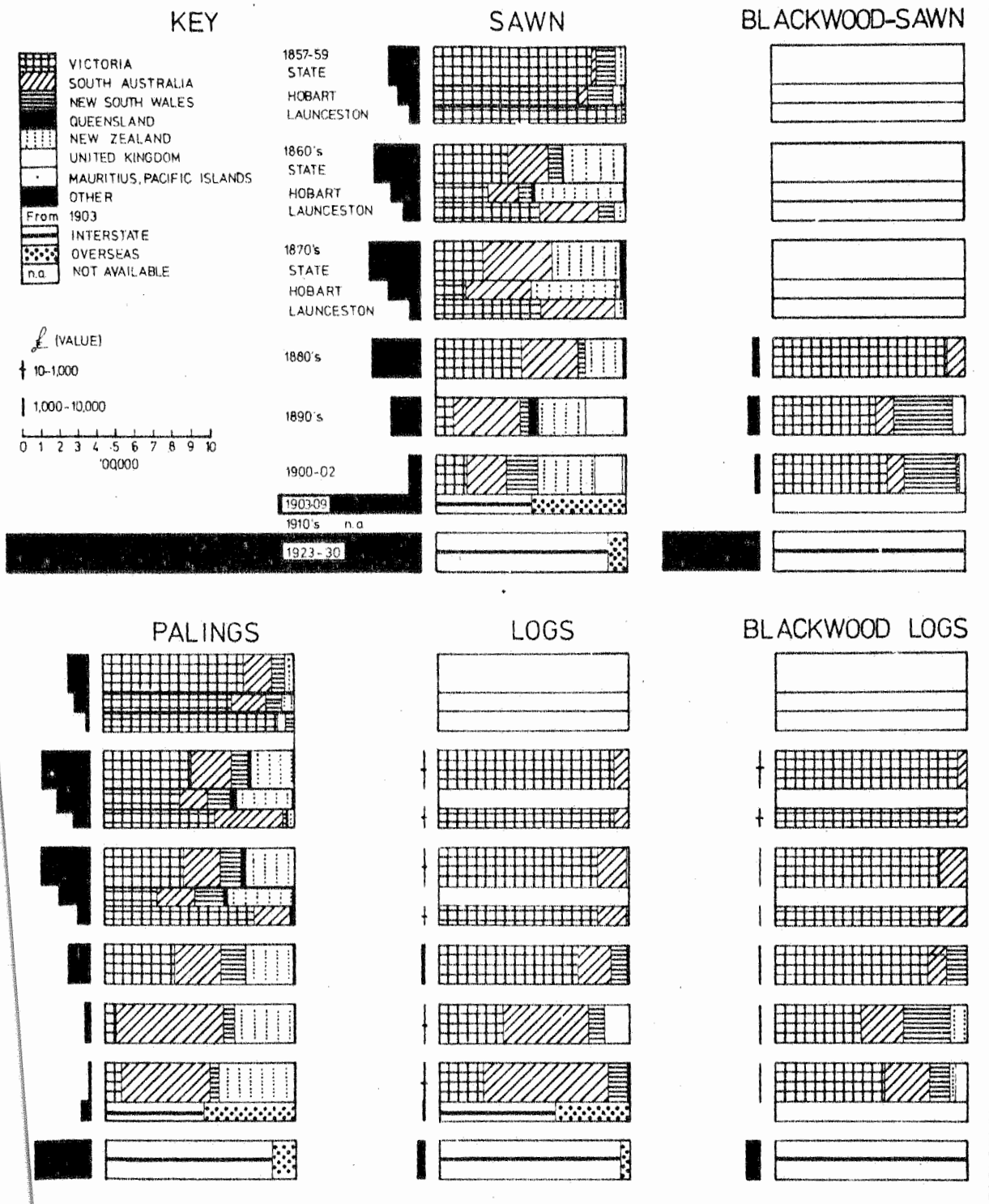
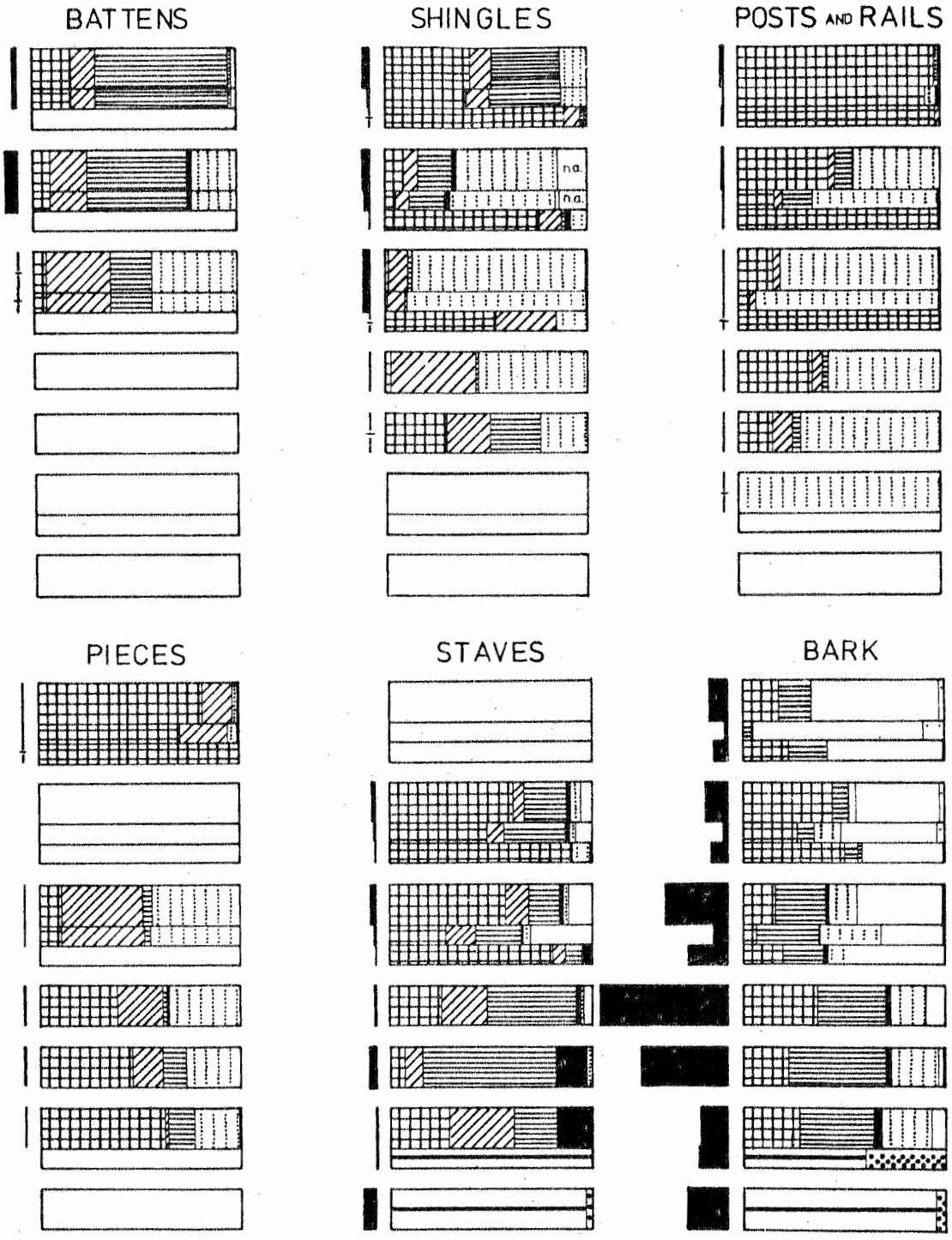


FIG. 4.5B DESTINATIONS

TASMANIAN TIMBER TRADE 1850-1930



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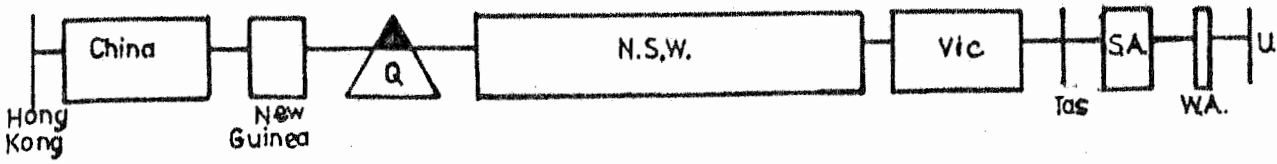
and collated to indicate the need for a federally applied protective import tariff (compare import and export values, Fig. 4.9; Appendices 4 and 5) was used to test the hypothesis. The pattern of timber flows for one year is depicted schematically in Fig. 4.7. Though there were changes in the other two years the pattern remained similar. For ease of comparison all timber flows were expressed as a percentage of the timber export total of the relevant state and plotted at a uniform scale. This avoided the distraction associated with using the different export values.

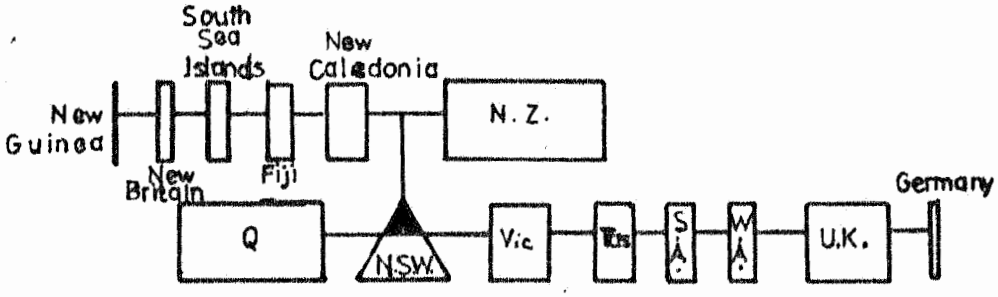
As anticipated, the trade was chiefly with near neighbours. There was a rapid decline in timber flows with increasing distance and few states sent a significant percentage beyon Australasia. Western Australia was the exception in that most of its trade was to distant areas and the volume increased with increasing distance; however the timber entering the interstate trade showed the effects of distance decay. The divergence is more apparent than real as examination of details reveals agreement with the Tasmanian pattern Until the mid 1920's, sleepers dominated the export trade of Western Australia (Lane-Poole, 1928, Appendix 1). The other products being sent overseas were paving blocks and piles. All long distance flows were of special purpose timbers. Trading links aided the transferability of these products. Norwegian ships brought softwoods to Australia, and returned to Europe with jarrah sleepers (Blainey, 1965, 282-3).

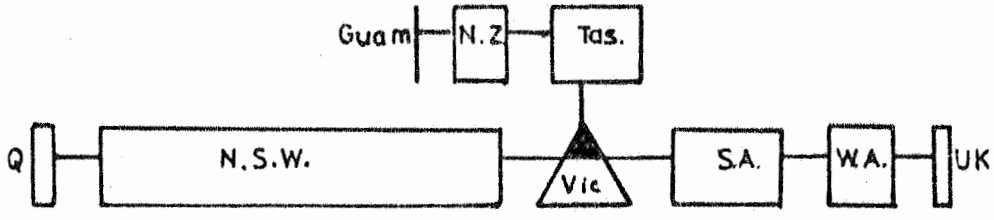
South Australia which appears to be another exception in that the intervening state of Victoria was virtually by-passed actually conforms to the model. The timber, exported overwhelmingly to a single market, consisted of oregon and other timbers destined for the New South Wales mining centre of Broken Hill. The movement which was from the coast inland followed the established transport links. New South Wales was thus a nearest neighbour. The effect of distance is well displayed by the Victorian trade. The distribution of Victorian exports among the three adjacent states may reflect a third factor, varying size of market. Victorian exports to Queensland were affected by the presence of an intervening opportunity. New South Wales was notable for the number of markets

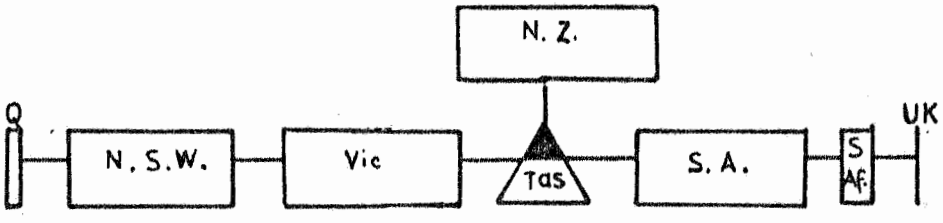
FIG. 4.7 Schematic Representation of MARKETS for the TIMBER TRADE of each AUSTRALIAN STATE in 1898.

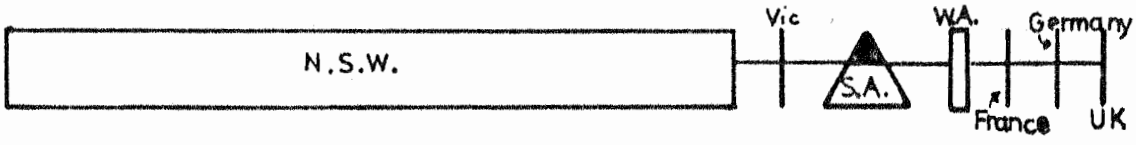
(By Percentage)

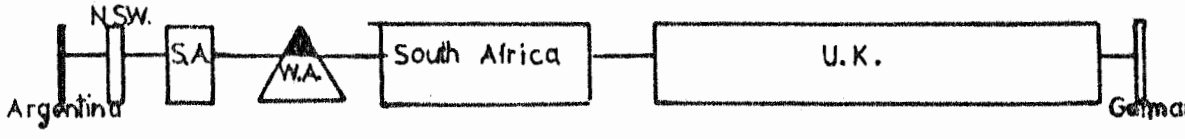












Source : APPENDIX 4B

the importance of which tended to be inversely proportional to the distance from that state. The United Kingdom differed from this pattern and it is surmised that this represented special purpose timbers. The bunkering of steamers at Newcastle and the strength of the numerous trading links between Sydney and Pacific Islands contributed to the diversity of markets. Queensland shows a marked inequality in the size of adjacent markets. This reflects the relative strengths of the linkages between these areas and the variation in demand. It was a time of railway construction in China; the long distance flow probably represented sleepers.

The conclusion is inescapable. The timber trade of all Australian states was characterized by the same basic patterns of movement. Most timber travelled over relatively short distances to adjacent areas. And though the evidence was incomplete, only special purpose timbers overcame the friction of distance.

When the total flow of timber around and from Australia is considered as an entity, a different pattern emerges (Fig. 4.8). Remote markets dominate. The contradiction is resolved by examining the respective values of the trade originating in each state (Fig. 4.9 Western Australia was pre-eminent, and its pattern of markets determin the total Australian pattern. Tasmania seen within the Australian context generated little inward or outward trade. New South Wales and South Australia had export trades considerably greater than that of Tasmania. The South Australian position was anomalous. The stat lacked an indigenous forest resource, and the state government schemes based on softwoods began soon after 1870 but the yield was unimportant until the 1920's (Wallis, 1970, 12). South Australian exports were only one-third to one-quarter of its imports and represented timber moved overland to Broken Hill. The practice of re-exporting softwood accounted for some of the exports of New South Wales and Victoria, including their exports to Australia's premier timber producing province in the west. Imports were dominated by long distance flows of softwoods.

FIG.4.8 THE AUSTRALIAN TIMBER TRADE

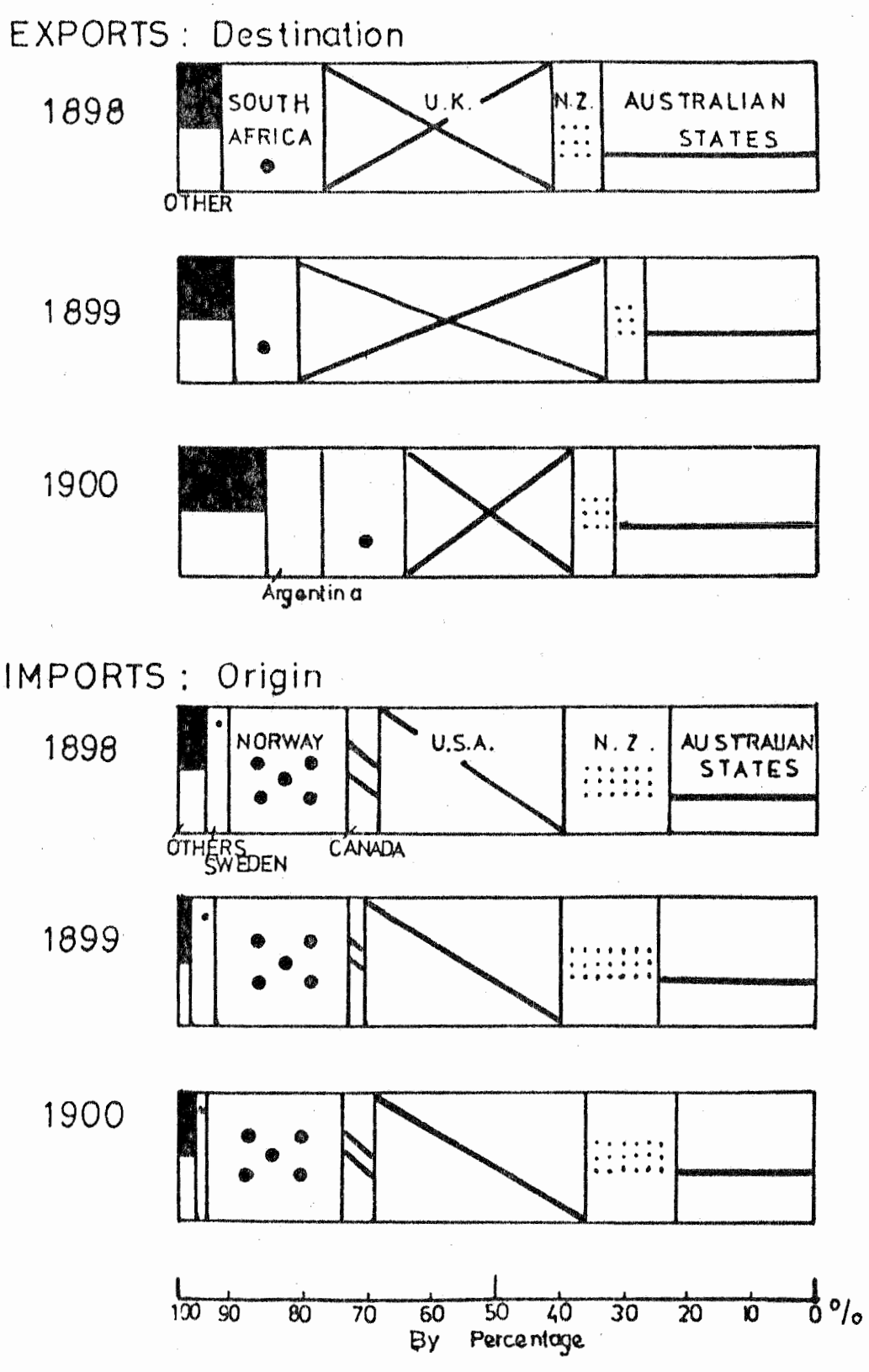
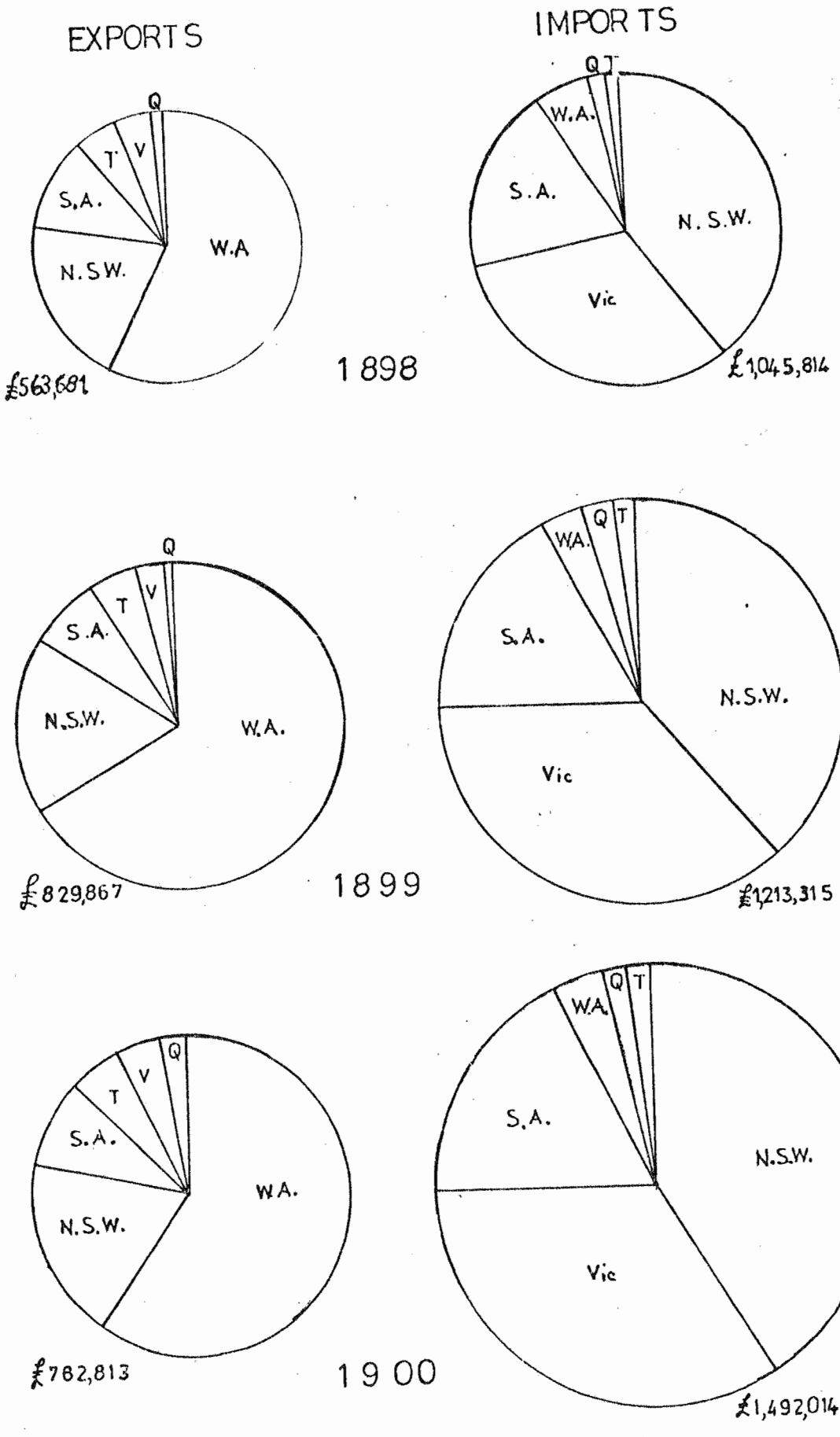


FIG.4.9 THE AUSTRALIAN TIMBER TRADE, 1898-1900
State Share By Value



The Tasmanian timber trade was based on eucalypts with a minor but significant contribution from blackwood. The indigenous forest provided the sole basis for the export trade. Most of the timber was exported in the form of general purpose constructional materials used for housing and fencing, the movement of which declined rapidly with increasing distance from Tasmania. Only special purpose timbers travelled far. At particular times, large quantities moved to Europe, South Africa and Asia, and were also in demand in the Australasian markets. Both types of commodities show considerable annual variation in amounts exported. Technological change affected the processing and the products exported; some became obsolete and others developed. Products typically underwent little processing and the move to more refined products such as paper had yet to reach the stage of commercial production. With respect to levels and type of processing, Tasmania lagged behind most mainland states. Despite its importance to Tasmania, the export trade was only a minor part of the total Australian trade.

Chapter 5 EXPLANATION OF THE TIMBER TRADE

Introduction to the Theory of Trade

The principle of complementarity has been identified by Ullman (1956) as the basic factor controlling the existence of trade between regions. This assumes that the item of trade possesse transferability. Complementarity originally utilised the concept o areal differences which resulted in the surplus of one area meeting the deficiency of another thereby creating spatially separated areas of supply and demand that specifically complemented each other. However the term "complementarity" is applied also to a more competitive situation, that of a difference in price sufficient to allow viable trade in that good. The movement would be from the lower price to the higher price area. Obviously the idea of price differential was implicit in the original idea or else the exchange could not be profitable but Ullman's model concentrated upon areal specializations and resultant variations in availability. If the transport costs are included within the calculation of the price differential then transferability is, at least, partially reduced to one aspect of complementarity as are factor endowments and intensiti comparative advantage, and internal and external economies. Complementarity will be considered to be synonomous with the concept of price differential for the purposes of the following discussion.

The two components which create complementarity are the value place on a good by the market and the opportunity to move the good to that market. The value or desideratum of a good is measured by the market price and is influenced by the factors of demand. The movement opportunities open to any area of production are affected by the factors of supply and transportation. Trade patterns may be modified by substitution either of a good or of an area, the latter being termed intervening opportunity. The concept of price differential even means that a lower priced competitor may undersell the local specialist commodity in the local market.

The search by a pioneering society for a staple item of trade is motivated by the desire for a commercial economy and shaped through the interactions of culture, man and environment with the context of a particular relative location. In terms of the orthodox factors of land, labour and capital, a frontier economy has particular attributes. 'Land' is typically the only factor of which there is an abundance. Interpreted in the broad sense of a natural endowment, 'land' is in this case, extensive mature forest which could become an export staple through the application of labour and capital. Labour was characteristically scarce and expensive; the requisite skills may be lacking but the circumstances of frontier li rewarded those who learnt quickly. Capital, which could be used to replace labour was in short supply and the activity tended to be small scale and rudimentary. The scarcity of capital accentuated t need for organizational skills which would ensure the most efficient and effective use of the capital available. Enterprise was shown b some members but entrepreneurial skills and ability were likely to b lacking. These difficulties were compounded by isolation measured in terms of distance and inaccessibility from potential markets. T economic growth of a pioneering colonial society depended upon the extent to which the advantage of natural endowment was seized upon a at the same time the extent to which the difficulties inherent in th location were overcome.

For each and every item of trade there will be a fini set of places in which a demand for such a commodity exists, and for every area of supply there exists a second finite set of places to w movement opportunities are possible. When this second group, the s of movement opportunities, is plotted over space a map is created of opportunity surface for that commodity produced at the particular pl of supply under consideration. It is to be expected that each diff item derived from the Tasmanian forest would have its own characteri opportunity surface determined by its desiderata and cost structure. The opportunity surface is bounded by the limit of trade viability and would be located at the break-even point where the price differential exactly equals the transport costs.

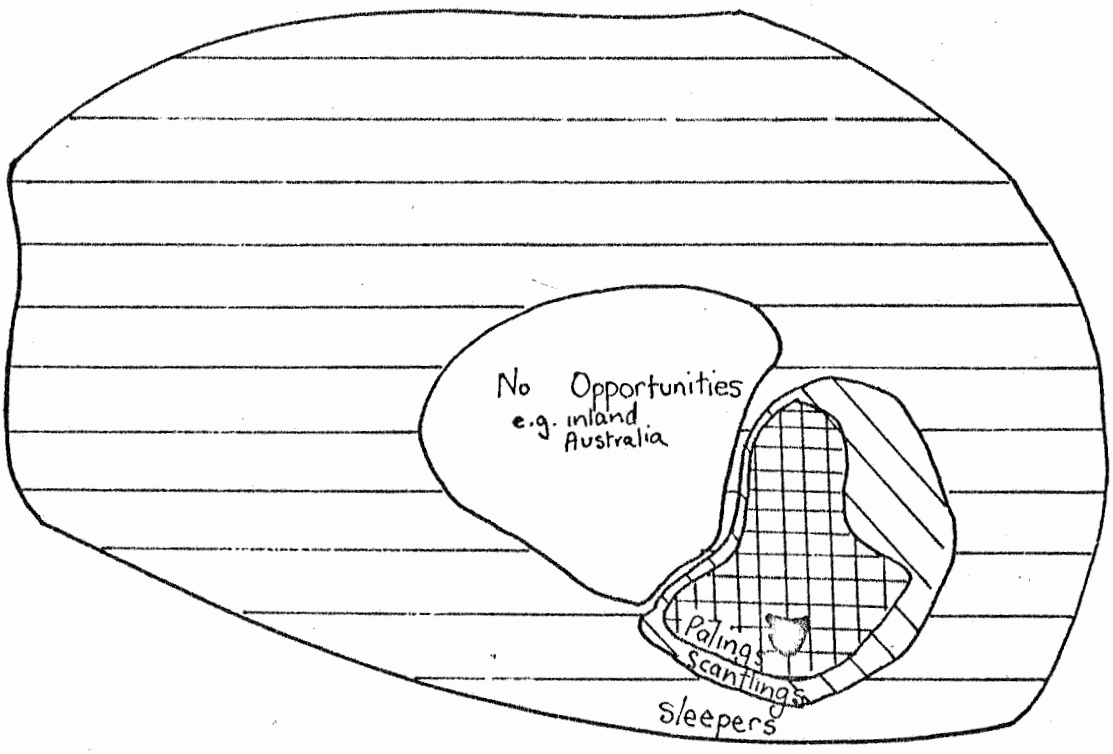


Fig. 5.1 Opportunity surfaces depicting relative movement opportunities for several of the timber products supplied from Tasmania.

However, relatively few of the places on the opportunity surface will actually engage in trade with the specified source of supply. The actual trade linkages will be a small number of those possible. The theories of trade provide several different explanatory models but none is entirely satisfactory in explaining the nature of the Tasmanian timber trade from 1830 to 1930. The particular form that any trade takes must reflect the conditions of demand, transportation, and supply specific to that case of spatial interaction. Discussion will be of these factors as they apply to the Tasmanian case study and while not limited to the conceptual framework of any one model that proposed by Ullman has been influential.

DEMAND FACTORS: The Nature of the Market

Desiderata is the chief factor determining the maximum amount the market is prepared to pay for a good. Due to practical difficulties, it is equated with the market price. The desiderata accorded Tasmanian timber depended upon the purpose to which they were to be put, and the extent to which they were unique. A rough but useful classification is a two-fold division into general and special purpose timbers. Much of the timber that left Tasmania was general purpose construction timber, e.g. fencing materials and scantlings used for framing. Boards were more specialized, but remained essentially general purpose timbers for exterior use and flooring. The market desired cheapness, ease of use, and reliability of quality and quantity. Since most timbers are satisfactory for some or all of these functions, the range of possible substitutes is very great. Availability, price structures and consumer preferences determined which timbers were in direct competition at any single time.

Special purpose timber capitalized upon intrinsic properties of particular woods, properties which matched the task. Substitution was reduced in these cases to other timber, or in some cases, other materials with very similar or identical properties. Special purpose timber was not always highly priced. Prices were low for railway sleepers and paving blocks, but relatively high for piles and decorative timbers. Need, range of possible substitutes and the availability of supply significantly affected the price. The market situation for sleepers was highly competitive unlike that for piles. Piles of great length had few substitutes. Decorative timbers were more highly valued by the market.

Substitution on the Australian market adversely affecte the Tasmanian timber trade. The substitution was both of product and area. Many of the more specialized products such as shingles, battens and trenails became obsolete with changes in fashion and technology. General purpose hardwoods had a low desiderata and lost

ground to imported softwoods. Piles, staves and decorative timbers were least affected by the substitution of product. Tasmania suffered from another disadvantage. Its products resembled those from other Australian forests creating a potentially competitive situation. This was initially of little importance as most alternative sources of supply remained inaccessible. The situation changed with the expansion of railways into the forest beginning the large scale production of virtually identical products. Few of the substitutions of area were intervening opportunities *stricto senso* but the outcome was the same. In periods when substitution of area was great, the Tasmanian timber trade, already threatened by softwood imports, declined further.

The overseas market provided the example of the domest situation in reverse. Tasmanian timbers sought to become a substitu in a market traditionally dominated by Scandinavian timbers. Initial efforts were to little avail. However moderate success followed low key promotional activity during the 1890's. Doubtless the contemporaneous and vigorous campaign promoting the similar hardwoods of Western Australia benefitted Tasmania. The eucalypt timbers gain a portion of the British market where properties of length, durabilit heaviness and abundance were needed, but the competition remained strong. Only once was Tasmanian timber considered to have no equal. Blue gum proved superior to the only other timber considered capable of meeting the special needs of harbour construction in the English Channel. Great length and weight were the attributes which eliminat all other competitors. Strong tidal currents made pile-driving difficult and increased the likelihood of logs accidently floating into busy shipping lanes. The high specific gravity of blue gum removed the need for expensive weighting procedures and the savings enabled the high freight cost to be met. In addition blue gum being less palatable to the *terrida* worm was capable of re-use (Heyn, 1901, 24-25). Used as temporary staging, nearly seven million superficial feet in the form of piles 100 feet long and 20 inches squared left Norfolk Bay, Adventure Bay and Dover for the naval works at Dover, England. The impact of the large order is apparent in the percentage of timber exported as logs in 1901. Blackwood, alone of the decorati timbers found a small but steady market in Britain where the competiti

from well-established, lower priced timbers was very great. Tasmanian timbers handicapped by frieght costs, were further handicapped by a lack of uniqueness and their continued sale on the British market depended on the creation of a customer preference for timber *made in Tasmania*.

Trends in Domestic Demand

Timber is not a commodity regularly consumed like wheat and fruit. New construction is the key to the size of the market as the demand arising from maintenance is minor. Thus the size of the market depended heavily upon the state of the economy, being greatest in times of expansion and least in times of recession. Activities consuming large quantities of timber include underground mining, railways, telegraph lines, port facilities, and housing. As much construction tends to be intermittent in nature, the outcome will inevitably be translated into the fluctuating pattern of trade so characteristic of Tasmania, New South Wales and Western Australia. The peaks in the first two trades were frequently in response to activity in Victoria (*The Wealth and Progress of N.S.W., 1891, 123*).

Relationships between total population and total consumption during the 1920's show spatial variation. Consumption rates depended partly upon the nature and extent of activity, and partly upon the local resources and extent of their utilization. The average world pattern of timber consumption showed overwhelmingly use of softwoods, with hardwoods representing only one-fifth of all lumber consumed. In Australia the ratio was closer to parity (see Table 5.1) and was clearly affected by the local preponderance of hardwoods. In times of prosperity when the demand for timber increased, the relationship between indigenous hardwoods and imported softwoods was more or less maintained. Australian states varied in their rate of utilization of timber and in the proportions of hardwood and softwoods consumed. Tasmania had a per capita consumption rate approximately half the Australian average while Queensland was just

Table 5.1 Consumption Rates for Timber

per capita per annum

Australia c.1927 sup. ft.			Queensland c.1927 sup. ft.	
Hardwoods		90	Structural Hardwoods (eucalypt)	55
			Cabinet woods (cedar, etc.)	15
Softwoods		102	Coniferous woods (imported mostly)	105
imported	84			
locally grown	18			
		192		175

Tasmania	
1909-10	103 sup. ft.
1922-24	96 sup. ft.

Sources: Australia : Lane-Poole, 1928, 97
Queensland : Lane-Poole, 1928, Appendix 2, 124
Tasmania : Rodgers, 1928, 834

below that value. Clearly some states must have been big consumers of timber; these were expected to be Victoria and New South Wales. Given the low volume of imported softwoods, the Tasmanian pattern of softwood consumption was probably the reverse of that in Queensland.

Per capita consumption may have dubious validity as a basis for prediction of total market demand. Some activities with high consumption rates were located in sparsely populated areas and may reflect the development of resources and infrastructure, e.g. mining areas, or the construction of the Trans-Australia railway line. However, the size of the population and their income influenced demands for housing and decorative timbers. The extent to which the market would grow with population increase is unknown. Neither earlier relationships to population nor any relationship to levels of prosperity were determined.

Cultural factors which determined the accepted way of performing particular functions also affected market size. Desiderata and its associated size of demand is affected by the technology in use and hence the ease with which a particular commodity is obtained. Thus metal was not a constructional substitute until the appropriate technology was developed. New technologies led to the replacement of shingles by corrugated iron, while metal beams and later steel and concrete were used instead of timber. Other factors affecting the accepted way of performing a task reflected fashion and behavioural aspects. Thus the size of the market, both domestic and overseas, was related to contemporary construction activity and to the willingness to use that particular timber. The choice was determined by a combination of the inherent characteristics of the timber, the nature of its supply, culturally determined alternatives and a range of behavioural aspects.

Marketing the Product

Behavioural aspects through their influence upon decision making set the limits of the desiderata, and give rise to customer bias. Knowledge, attitudes and experience provide the key to the customer's preferences while resistence to change and avoidance of the unfamiliar are to be expected as normal reactions to difference. Eucalypt hardwood timbers were unfamiliar in all but Australian market places, oversea demand was being met by other, familiar and well established alternatives. The history of timber exports to overseas markets is to a large extent a history of the dissemination of information.

Diffusion of information concerning indigenous timbers preceded settlement, but it was inaccurate, and the first attempt to obtain naval spars from Australia ended in failure. The flow of information in official correspondence and from returning settlers prompted early efforts to obtain Australian timbers. For upwards of seventy years, neither the government nor private speculators

perservered in the promotion of ecualypt timbers on the British market. Information and sample specimens, some of exceptionally large dimensions, were sent spasmodically. The London Exhibitions in 1851 and 1862 attracted such examples. Handicapped by unfamiliar properties, irregularity of supply and possibly higher prices, acceptance of Australian timbers was very slow.

During the 1890's promotion intensified and achieved limited success more Tasmanians visited Britain with the intention of advertising Tasmanian timber and to learn the requirements of the market. The Gray Brothers of Adventure Bay, Bruny Island were among the most enterprising at this time. While Fred Gray managed the extraction and preparation of timber, his brother Henry attended to marketing. Henry Gray continually engaged in promotional activity using newspapers, specially published booklets and the personal touch. By visiting the United Kingdom twice and South Africa once, Henry Gray obtained first hand information about likely demand and sent samples of special purpose timber to particular projects, an action which led to large orders being placed during this and the next decade with his firm. The Gray Brothers specialized in squared blue gum pilings up to 120 feet in length and guaranteed to be of uniformly high quality. Between the late 1890's and 1906 blue gum piles were sent to the Admiralty Harbour works at Dover, U.K., Simonstown, South Africa and at Malta; to the New Naval Docks at Keyham Devonport and the Hull Joint Dock, Hull. Such enterprise was well timed as it occurred at a time of rising demand. Active promotion of Tasmanian timbers did not revive in the post-war era despite the great expansion of demand. Tasmanian timbers continued to be available but from specialist timber merchants.

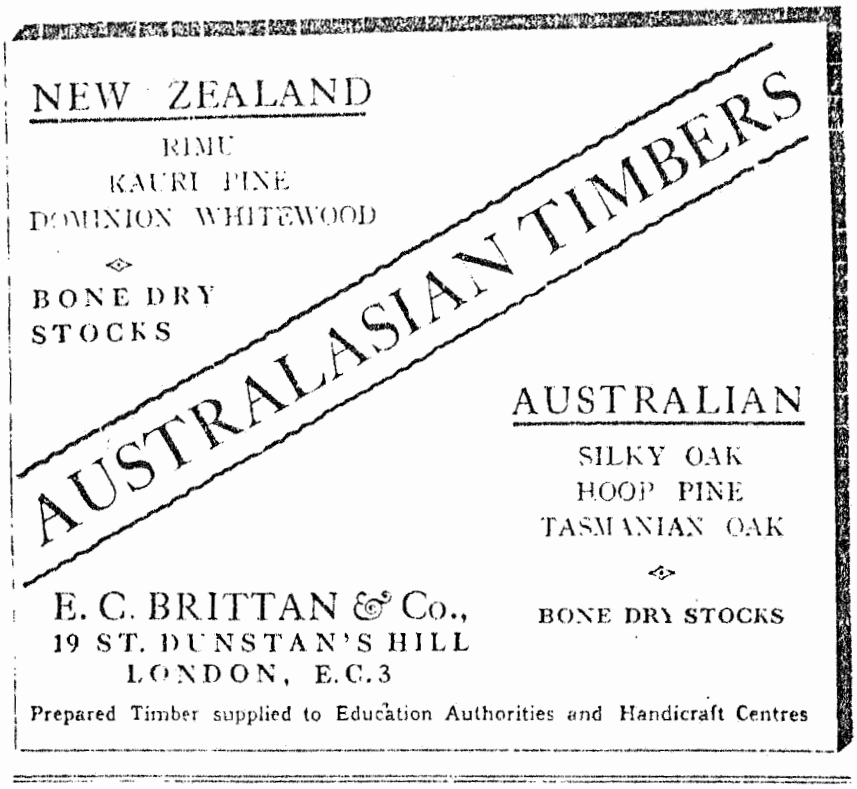


Fig. 5.2 Advertisement in *Empire Timbers*, 1928.

The Australian situation was also modified by diffusion. The movement of substitutes into the Australian markets where hardwoods were known and accepted was subject to the same processes of diffusion and acceptance as eucalypt hardwoods experienced in Europe. Advertising, availability and competitive price led to the trial acceptance of the innovation but softwoods bega the process with an advantage, most Australians were migrants already familiar with such timber. A satisfactory experience which was an essential pre-requisite for continued use required the availability of sufficient information to assure appropriate use and supplies of adequate quality.

Negative attitudes to eucalypt timbers acted against their ready acceptance in Europe and made them more prone to rejection and replacement than occurred in Australia. The appearance of the timber and prejudice due to preference for softwoods and to ignorance delayed the initial trial acceptance. Unfortunately the first experiences were not always satisfactory which reinforced the existing

prejudice. Eucalypts were more or less subject to the defects of gum-veins and blotches, dry rot in the heart timber, knots and cracks of various kinds. Not all timber exported was carefully culled. In a collection of solicited testamonials *(Tasmanian Forestry, 1910, 52-4)*, the Engineer in charge of Existing Lines for the Tasmanian Railways commenting on Tasmanian experience claimed that small, broken gum veins were not a defect in sleepers, that gum blotches did not reduce durability and that the characteristic splits or 'suncracks' that arose during seasoning were not detrimental unless of considerable length in straight grained timber, however heart was to be completely avoided. The Tasmanian Government Timber Inspector echoing this last comment underlined the importance of education:

> *I am at a loss to understand engineers and others in their enquiries from our merchants for quotations specifying that heart will be accepted; thus showing the necessity of making our timbers better known to foreign enquirers, who are more in touch with deciduous grown timbers where heart-wood is always accepted, ...*
>
> *Forestry Handbook, 1910, 54*

Ignorance could thus lead to a very unsatisfactory experience. The *defects of shakes and shrinkage* were viewed very seriously as a cause of prejudice, and were judged to be undesirable in appearance though *not really affecting strength and durability (Forestry Handbook, 1910, 9)*.

A British timber expert (Heyn, 1901, 27) described his experience with such timber and his solution to the problem:

> *At first I was rather frightened to drive piles which had great shakes at the ends, but I must say that, with one or two exceptions, they bore the ordeal well. All those piles which I am now sending to Dover are ringed at both ends in the bush. ... and I find this a very good*

> *preventive. I think that, generally speaking, these shakes are more detrimental to the appearance of the timber than injurious to its real value. But for timber which has to be sold in open market, of course it would be wrong to overlook the fact that these shakes might prove a serious obstacle to their sale.*

The major problem facing the Tasmanian timber trade was the need for quality timber which required not only careful cutting and culling but also careful and adequate seasoning. As the same British expert (Heyn, 1901, 29) noted:

> *... there is not the slightest use in sending unseasoned scantlings of Tasmanian timbers to England. It would arrive there warped, cracked, disfigured, and would have no chance against the enormous quantity of really good wood with which it would have to compete.*

Sending shipments 'not of the best' began with the inception of timber flows to Britain and though the practice may not have been widespread the presence of some inferior timber was enough to damage the reputation of all timber.

Prejudice was not restricted to Tasmanian timbers. In the 1920's, a period when Britain needed to find new sources of softwoods, oregon was subjected to close scrutiny so as to determine the causes of the unfavourable attitude towards it. The conclusions reached were that it had been earned by defects in the condition of the wood arising from inadequate seasoning and the effects of the long voyage to market. The other problem was an inherent property, the grain was too prominent for British tastes, becoming apparent with time despite careful smoothing *(Empire Timbers, 1928, 46-8)*. The situation, it was suggested, would be rectified by careful selection and grading prior to shipping, the very solution firmly advocated by Green in 1894 for

Tasmanian timber. However, this digression into the problems experienced by Oregon indicates the existence of considerable variation in standards. Oregon was praised in Australia as 'graded' but was apparently inadequately sorted for the British market used to very high standards of uniformity and guaranteed quality.

An aspect of the overseas market likely to disadvantage new competitors was related to finance and marketing. Scandinavian timber was sold to the trade in cargoes or parcels through agents who gave four months credit. American procedure was *cash against the document*. Also the time between purchase and delivery was only two to three months. Exporters of oregon it was noted, did not always have the required tonnage on hand and then it faced a longer voyage to the buyer *(Empire Timbers, 1928, 39-40)*. The same lack of available stocks was a long-established feature of the Tasmanian industry and increased the possibility of substitution at the market.

The Impact of Protectionism

Import tariffs levied on timber were designed through the resultant price increase to significantly impair the competitive position of those imports. Tasmanians firmly believed that tariffs levied against their timber exports were highly effective in achieving that aim, for instance, tariffs had *practically shut Tasmania out* of *the important market of Victoria*. The nineteenth century decline of the timber trade was attributed to this additional obstacle to trade, and it was an article of faith that a return to free trade would mean a revival in the timber trade.

There is little supporting evidence. Large volumes of dutiable timber were exported to Victoria until the 1890's when another opportunity intervened. With the railway developments of the period, large scale exploitation of Victorian forests for the local Victorian market commenced. A similar situation of internal development providing alternative and closer sources of supply prevailed in New Zealand further reducing demand for Tasmanian timber. Tariffs were ineffective while the demand existed and the claim that protective

tariffs closed interstate markets to Tasmanian timber is largely myth. The importance of the tariff lies in its behavioural not economic consequences. It acted as a psychological barrier to the supplier dampening his expectations and possibly his entrepreneurial efforts, and at the same time supplied him with a rationale for declining export sales when the root causes lay elsewhere. The anticipated major expansion in interstate sales did not eventuate in the decade following federation.

TRANSFERABILITY

Whenever an area of supply is separated from an area of demand trade between the two is possible only if the product can be transported satisfactorily from one to the other. Movement is thus of great significance in shaping the interactions possible. The cost of movement can be high enough to discourage trade between places in proximity and to prevent trade between distant places. Transferability measures the effect of the friction of distance in terms of time and money costs. The nature of the product is one aspect which affects ability to move over space. Timber did not suffer from perishability but had its own inherent problems of bulk and weight. These were exacerbated by the low unit value earned by timber which reduced its ability to support high freight costs. Unlike some other high bulk - low value commodities such as wheat, wood chips or iron ore, timber remains difficult to handle in bulk and transport costs constitute a significant proportion of the total market cost. Eucalypt timbers were handicapped more than most by thei high specific gravity. One hundred superficial feet of unseasoned eucalypt timber was twice as heavy as the same volume of Oregon (Table 5.2). This had consequences for the transferabilities of the two timbers. The same ship loaded to the Plimsoll line with one or the other type carried the same weight of timber but that represented

twice as much oregon. This difference in the amount of timber carried assumes greater importance in the cost structure as freight rates for timber were determined by weight but that same timber was sold by volume. If the two timbers were in competition then the lighter wood would be advantaged by lower costs per hundred superficial feet.

Table 5.2 Accepted Trade Weights for Freightage By Sea and Rail of Principal Timbers Used in Australia

Softwoods (Imported)		Hardwoods (Indigenous)	
Oregon	700 sup. ft to a ton	Green	360 sup. ft to a ton
Red Deal	750 sup. ft to a ton	Dry	480 sup. ft to a ton
Yellow Pine	900 sup. ft to a ton		

Lane-Poole, 1928, 133

The form of the transport had an effect on the transferability of timber. Economic movement over long distances was possible only by water or rail. Economic viability with other forms of transport was restricted to short hauls. This was of great significance in the case of moving logs to the mills, and accessibility to suitable transport was a major determinant of the location of exploitation. Unless rail facilities were established, forests remote from ports remained remote from the area of commercial logging. The problem of land transport costs for logs was partially circumvented for timbers which floated allowing rivers to become the basis of the land transport system. This aided the getting of Huon pine, New South Wales cedar and most overseas softwoods but was not applicable to eucalypts. Heaviness was one of their intrinsic properties; blue gum and jarrah were particularly heavy, sinking when immersed in water. Thus the extraction of eucalypts depended on the

more expensive forms of land transport. Tasmania was fortunate in being able to minimise this cost. Possessing prime forest in close proximity to and readily accessible from the sea, Tasmanian timber could undersell supplies brought shorter distances from less accessible mainland forests. Thus Tasmania had a comparative advantage which provided a firm economic basis for the early establishment of trade to the small but growing Australasian markets.

The conversion of logs to sawn or split timber involved considerable reduction in volume and weight while becoming less awkward to handle. However all processed timber required greater care in handling. For instance, once sawn, floation was no longer feasible for lighter timbers, and this factor had a major influence on locational patterns in Ontario (Head, 1975). The medium by which timber destined for market moved furthest and in greatest quantities was by sea, a reflection of the differential freight scales. Freight costs were determined by many variables including the weight per unit volume, the quantity, the distance and the nature of the shipping link. The weight and bulk of eucalypt timber has already been mentioned. Economies of scale in the organization of shipping were equally important. A greater cargo-carrying capacity reduced the freight costs per unit volume. All overseas consignments from the southernmost ports of Tasmania were large scale operations that may have become increasingly efficient. Turnaround time in port fell from one month to one week or less prior to the First World War. However organization was required or the advantages accruing from economies of scale were lost. Such large scale movements depended upon the provision of sufficient quantities at the appropriate time. Coastal shipping, by contrast, was predominately of small scale movements.

The distance between potentially complementary areas can be measured in units of time, of linear distance e.g. miles and by economic costs. The last is the most relevant to a discussion of trade flows. Some roughly concurrent economic costs are listed

in Table 5.3 and the costs of transferring timber from many different areas of supply to the market of Melbourne during the 1920's are depicted in Fig. 5.3B. Two contradictory trends are discernible. Firstly, the pattern of freight costs lacks a direct relationship with distance. Thus, Sydney and the Baltic ports are equidistant from Melbourne when measured by cost despite the great variation in actual distance and in the time taken by the voyage. Likewise Brisbane, and the Tasmanian and (North) American ports were equal distances from Melbourne in economic space, and Melbourne was locate further from the Western Australian timber ports than was Colombo. This distribution of freight costs over economic space is partially explained by reference to the nature of the timbers in transit, the extent to which economies of scale were utilized and the nature of the shipping links. Government policy had a great influence on the last factor. The Navigation Acts restricted coastal trade to Australian vessels thus preventing the use of British and other foreign owned vessels for all but overseas shipments. The foreign ships charged lower freight rates reflecting the lower rates of pay received by the crew and greater size of vessel. The actual linkages, their frequency and nature, reflected historical and geographical factors (examples are outlined by Blainey, 1966, 201-05 and 285-7). Some of the Australian ships regularly employed carryi timber plied between the many areas of supply and demand being controlled by shipping agents and depending heavily upon improved communication networks for efficiency. Thus timber for New Zealand may on one trip be loaded in a northern New South Wales port whilst the next load came from southern Tasmania.

The second feature shown by the freight rates is for those from the same place or for the same commodity to vary directly with distance. Thus Melbourne was further from the Baltic in economic and linear distance than was Britain, and Sydney was furthe from Western Australia than was Melbourne. Particular costs e.g. wharfage, loading for any voyage are fixed regardless of its length but increments associated with running costs occur with increasing distance. Thus Sydney was very close to Melbourne in economic

Table 5.3 Sea Freights c. 1928

A: Australian (Interstate)	Average cost per 100 sup. ft.
Sydney to Melbourne	4/3 to 4/9
Tasmanian ports to Melbourne	5/3 to 5/9
Brisbane to Melbourne	5/3 to 6/-
Cairns to Melbourne	8/- to 8/6
Western Australian ports to Melbourne	7/2
Western Australian ports to Sydney	8/-
INTERNATIONAL	
B: Baltic ports to Australian ports	4/5
American ports to Australian ports	6/-
Western Australian ports to Colombo	5/3
C: Baltic ports to Britain	1/- to 1/3
White Sea ports to Britain	1/8 to 1/10
St Lawrence to Britain	1/9 to 2/-
British Columbia via Cape Horn	7/1
(no data on freight via Panama Canal)	

Sources: A, B. Lane-Poole, 1928, 121,133
C. *Empire Timbers*, 1928, 39.

space when measured from Western Australia. However, not all interstate freight rates conform to this pattern. Northern Tasmanian ports were located close to Melbourne but had higher freight rates than did timber flows from Sydney. Again, the explanation lies in the nature of the shipping linkages and their influence on freight costs. Less shipping plied between Tasmania and Melbourne; their capacity tended to be smaller, their voyage potentially more hazardous and their cargo less assured, many timber ships returning to Tasmania came in ballast. These factors simultaneously increased the cost

FIG.5.3 DISTANCE from COMPETING AREAS OF SUPPLY to MELBOURNE

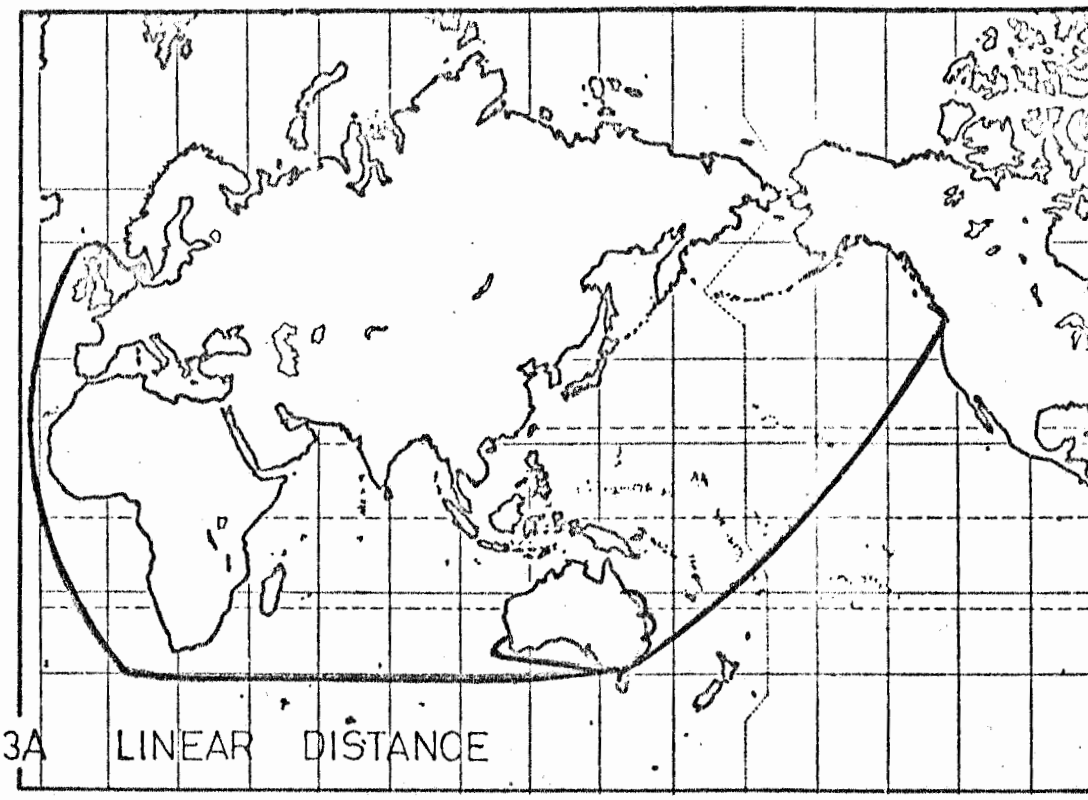
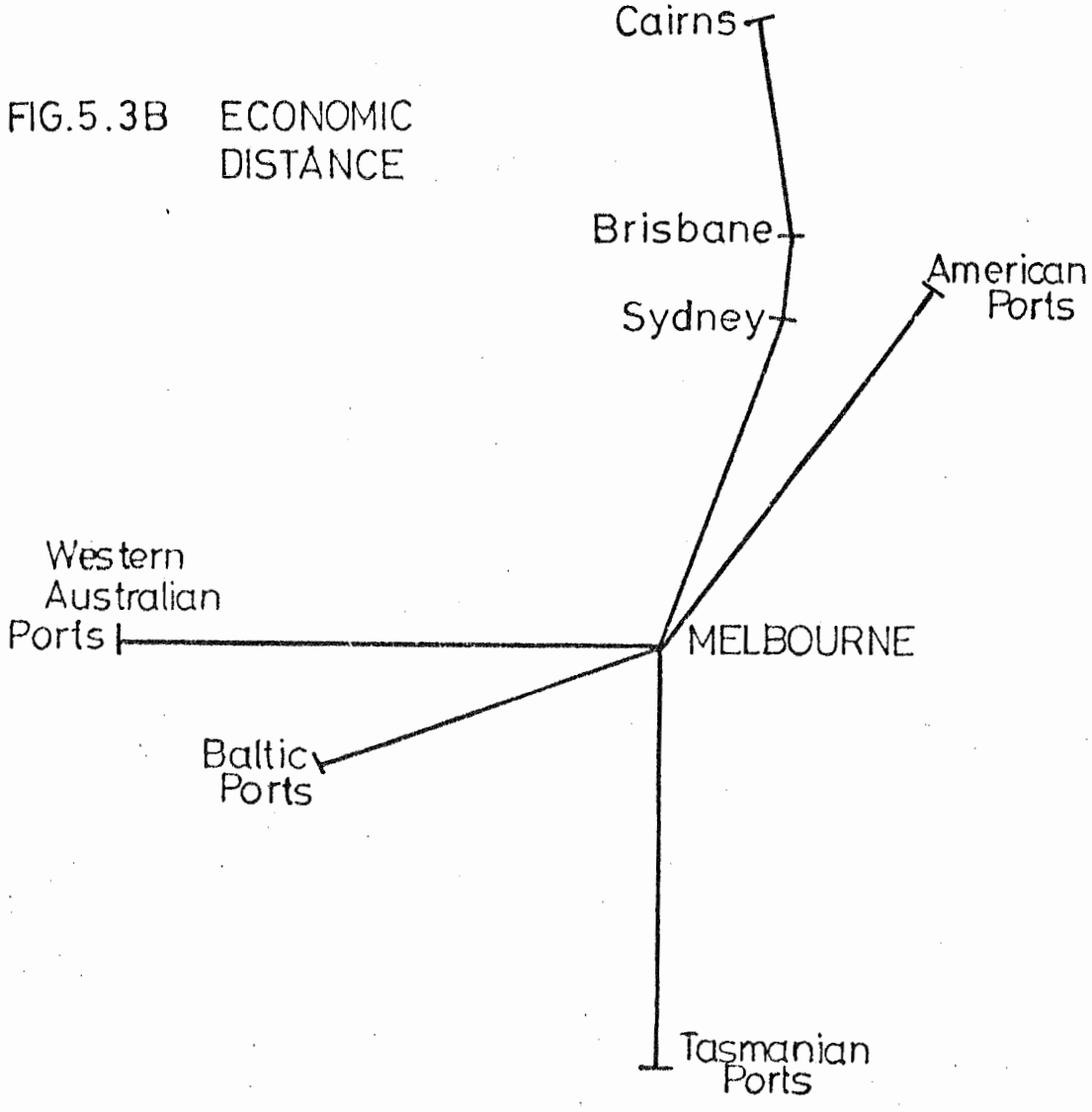


FIG.5.3A LINEAR DISTANCE

FIG.5.3B ECONOMIC DISTANCE



structure while reducing the competition. Consequently Tasmania was economically further away despite close physical proximity.

In the case of Western Australia, relatively little timber was shipped to the eastern states although large amounts moved greater distances to overseas markets. Differential freight rates were a contributing factor, but this trade pattern also reflected the inter-relationships which existed between market demand, total costs and profitability of the trade. The costs to be recouped by sales at the market were of two types, those related to production and those related to transport and distribution. The additional cost associated with transportation is influential in two ways. Firstly it determines the maximum distance that any product can profitably travel. Given differing costs of production but equivalent freight rates, the break-even point for each item produced in the same area will vary in proportion to the difference between the costs of production and the market price. If the costs of production were the same, then items obtaining lower freight rates could move further before transport costs exceeded the price differential between the two places. This latter case was probably important for the overseas movement of sleepers.

Secondly the increasing additional costs associated wi increasing distance of movement is likely to progressively reduce the competitive position of that timber product. This applies particularly whenever intervening opportunities provide similar timbers with lower costs. Since timber is a high bulk-low value commodity, freight costs are a significant factor in the final cost structure. Thus the impact of distance is particularly great creati the rapid distance-decay effect observed in the timber trades of Tasmania and other Australian states excluding that of Western Australia. Unfortunately the data does not permit a quantitative analysis of this tyranny of distance. Table 5.4 indicates that various products subjected to more or less uniform freight rates had very different market values per unit weight, but the costs of production are unknown for all but one product, unseasoned sawn eucalypt timber (Table 5.5). Some of the higher valued items do

Table 5.4 Average Market Price for Tasmanian Forest Products, 19(

BY UNIT WEIGHT

No. of items to a ton	PRODUCT	MARKET PRICE	PRICE PER TON
	Sleepers 7' x 10" x 5"	no data	n.a.
12¼	Blue gum		
13¼	Stringy bark		
3840	Shingles	10/6 per 1000	40/4
	Staves		
504	Wattle 2'8" x 4" x 1"	8/- per 100	40/4
298	Wattle 4'0" x 4½" x 1"	10/- per 100	29/8
256	Blackwood 4'0" x 4½" x 1"	12/- per 100	30/7
	Palings		
308	6' x 6" x 2")	8/6 per 100	26/2
350	6' x 6" x 1½")		
	Fence Posts		
27.2	7' x 7" x 5" x 2"	40 to 50/- per 100	11/3 to 13/7
	Fence Rails		
51	9' x 7" x 2" x 1")	30/- per 100	15/3
70	9' x 6" x 2" x ½")		
sup. ft. to a ton		per 100 sup. ft.	
	Boards (1" thick)		
384	Blackwood	25/-	96/-
360	Eucalypt, green	7/-	25/3
480	Eucalypt, dry	8/6	42/-
	Logs		
360	Blue gum	4/-	14/5
		per ton	
	Bark	131/6	131/6 (£6/11/(

Sources: Green, 1902, 69

Statistics of Tasmania, 1902

Table 5.5 Cost and Market Price Sawn Eucalypt Timber, c. 1928 per 100 sup. ft.

A. Costs: Tasmania		
Average production costs and cartage to wharf	20/1	Actual price paid at the wharf to the miller varied between 12/- to 27/-. Average price, 20/6.
Freight (Northern Tasmania to Melbourne, wharfage and all costs	6/6	
Total	26/6	
B. Costs: Victoria		
Air production costs and cartage to railhead	11/4 to 15/-	
Freight - by rail to Melbourne	1/10 to 5/8	
Total	13/2	20/8
C. Market price		
varied from 27/- to 50/-		
a fair average price 33/4		

Sources: A. Rodgers, 1928, 840-841
B. Lane-Poole, 1928, 132-133
C. Lane-Poole, 1928, 103

involve greater processing costs e.g. shingles, staves and seasoned boards while others clearly show the intrinsically greater value e.g. bark and blackwood which enabled those products to reduce the effect of distance to an extent not shown by most forest products. Table 5.5 reveals the slender margins that existed on some grades of timber from Tasmania, and highlighted the need for efficiency of organization and for quality of product. The Victorian production cost data is not strictly comparable since it omits several costs including depreciation but it does suggest the competitive advantage held by areas of supply favoured by location close to the Melbourne market.

Technology has drastically altered the role of transferability by reducing the tyranny of distance. The change to steam and steel increased the efficiency of water transport by making more trips possible in the same time period, increasing the manoevrability of the vessel and later by increasing the carrying capacity without a commensurate increase in crew, wharfage fees and so on. Steam contributed significantly to the relaxation of the *discipline of distance* in Scandinavian areas of supply. The great advances experienced by sailing ships were also significant and Western Australia continued to rely on such vessels well into the early decades of this century (Blainey, 1966, 282-3). The patterns of timber flows thus underwent much modification during the years from 1830. The flows lengthened and intensified and the details changed but many of the origins and destinations continued to show long established patterns of supply and demand e.g. Scandinavia to Britain. New flows required the creation of new markets or the development of new areas of supply. The expanding areas of European colonization in North America and Australia provided examples of this e.g. timber moved from Ontario to eastern U.S.A. and from Tasmania to Melbourne. And the new also interacted wi the old areas of timber trading, e.g. white pine and eucalypt timber to Britain and Baltic pine to Melbourne. The revolution in transport technology made this interaction economically possible. It is conjectured that an awareness of an accelerating reduction in the friction of distance contributed significantly to the timing of

the successful entrepreneurial activity which preceded the large scale flows of eucalypt timber chiefly from Western Australia to remote overseas markets.

Some of the timber exports transferable only through technological change were in demand because of that change. Railway lines needed sleepers, telegraph lines needed poles and bigger vessels needed wharves extended into deeper water, and these benefitted the timber trades of both Tasmania and Western Australia. The changes in technology and scale also benefitted suppliers of softwoods which were able to travel further and in greater quantities at highly competitive prices.

Land transport shared in the transport revolution. Use of railways altered the patterns of accessibility to Australian forests and thereby allowed new areas of supply to develop which removed Tasmania's original comparative advantage.

Throughout the century of study, transferability has been a major factor in the Tasmanian trade creating the strong distance decay patterns. Heaviness combined with low value, and exacerbated by high local shipping costs and minimal economies of scale tended to create relatively high freight rates which in combination with the increasing availability of substitutes has led to unfavourable market situations with increasing distance from Tasmania. The total costs may exceed the value the market is prepared to pay for the product; alternatively, a difference in degree, the costs may exceed the value that need be paid for similar purpose timbers. Only special purpose timbers show exemptions from the friction of distance.

SUPPLY FACTORS; The Nature of the Industry

The magnificence of the hardwood resource was never in doubt. At no stage was the idle condition of mills during times of depression due to a lack of supplies. The problems arose from the nature of the industry itself. Particularly from the way in which attitudes, knowledge and capital shaped an industry based on a timber recognized as difficult to prepare. In terms of factor endowments, the aspect in which the Tasmanian timber industry appeared to be the most deficient throughout the entire period of study was capital, particularly its organization and enterprise.

Land

The quality and quantity of the standing timber was indisputable, but other factors did influence the value of the land resource base. Accessibility was an important determinant of the nature of the industry. Physical accessibility relied on proximity to tidewater and the development of railways. Tasmania was naturally well endowed with one but poorly off for the other. The government aided the development of infra-structure by financing the construction of tramways from the 1860's and of railways from the 1880's but this was of limited value for forest exploitation and was more than offset by the deterrent to private investment in expensive forest railways implicit in the colony's land laws. Despite the excellence and accessibility of the resource, Tasmanian forests were unattractive to foreign investors until major changes in legal access were enacted in 1895 and restructuring followed the influx of British capital.

The forest was extensive, but it was damaged by the actions of man. Bushfires, wasteful practices of destructive exploitation and ring barking had wrought havoc in more accessible areas. The destruction was perpetrated by farmers and timber-getters alike and sprang more from apathy and indifference than from ignorance. Laws

limiting and regulating the use of forest on Crown land had existed from the 1830's when licencing of those engaged in forest exploitation began, but the policing of them was always inadequate. Full control, care and management of the indigenous forest had not been achieved by 1930. The wide-spread concern over possible timber shortages in Tasmania arose from an awareness of the damaged condition of forest accessible to transport facilities and not from any conception of any inherently inadequate resource.

Labour

This is the second of the three traditional factors of production but was of minimal impact in determining the course of the timber trade. Specialized skills appeared early, and for most of those engaged in the production of timber, it was a full-time occupation. Labour shortages occurred at particular times; in the infant settlement, during the early days of the gold rush, and during the First World War. There is no obvious evidence of serious long term shortages of manpower but labour was always expensive though there was variation in degree. However by the turn of the century Tasmanian rates of pay and conditions of employment appear to have lagged behind other Australian states so that labour costs were lower in Tasmania at federation, but uniformity was inevitable and was largely achieved by the 1920's after a period of industrial unrest. By the last decade of the study period high labour costs were held responsible for the high production costs. The belief was based on comparison with costs in overseas areas of production but the comparison omitted consideration of economies of scale and relative ease of procurement and preparation. The figures quoted below were compiled to show the expensive nature of Australian labour and may contain bias, but they are the only comparable data readily available. Labour was thus seen as a major factor contributing to the unfavourable situation of eucalypt timber when compared with softwoods.

Table 5.6 LABOUR AND WAGES

	Average hours worked weekly	Basic wage (average weekly) £. s. d.	Percentage of workers on basic wage	Percentage of workers receiving marginal allowances for skill
America	58	3 14 10	60	40
Norway and Sweden	48	2 8 0	n.a.	n.a.
Victoria	48	4 7 0	6	94

Lane-Poole, 1928, 133.

Capital

Large-scale exploitation of the forests able to utilize economies of scale existed in Tasmania from the 1850's but it was uncommon until the turn of the century. Most procedures were small to very small sized units, often depending on family labour and always under-capitalized. The substitution of machinery for labour was relatively slow, and typically low in terms of horse-power. Adoption of mechanical improvements was also slow. Many failed to invest profits from the good years into upgrading facilities, thus production capacity, equipment and techniques tended to lag behind more progressive and better financed countries. Inefficiency was not inevitable but it was widespread, and this increased the costs of production. The industry was structured as individual units supplying similar products to the same markets and competing against each other as much as against timber from other sources.

The eucalypt timbers had intrinsic properties which placed heavier demands on capital than do most other timbers. The logs were particularly cumbersome to move. Their great weight and length necessitated special techniques and equipment. Their hardness necessitated adjustments to cutting. Both of these increased the capital requirements for logging operations and milling. But the high unit costs of production for eucalypts when compared with softwoods arose chiefly from seasoning. Eucalypts tend to be unstable undergoing considerable shrinkage and change of shape while drying hence seasoning is desirable prior to use. This was recognized in the early years of adjustment to Australian timbers. Evidence to Bigge (H.R.A. III, III, 415, 21st April, 1820) reported the advantages of ~~the need of~~ air-drying timber for up to two years before use. Curr (1824, 97) complained of the premature use of timber. The problem in his opinion was intensified *owing to its seldom being cut at the proper time of the year.* Throughout the course of the nineteenth century the ideas about seasoning underwent little change. The need was acknowledged by all, but it was seldom practised as a standard or systematic procedure by producers. Probably much of the seasoning happened in an ad hoc manner while the timber awaited transportation and sale. Popular opinion, bushlore and scientific argument showed considerable agreement on causes and treatment. Experimentation of very limited scope occurred but seasoning remained an enigma.

By the early decades of the twentieth century the domestic market was undergoing a revolution of rising expectations. Minimum standards increased and timber which failed to measure up was spurned. Tasmanian timbers were adversely affected by process, particularly as systematic seasoning became routine on the mainland. The Tasmanian timber industry had two problems to overcome, one arising from the nature of timber, the other from the nature of the market. The market also required that high quality timber be available in sufficient quantity at short notice. More capital was required to meet these expectations.

Seasoning of eucalypts is time-consuming. The rule of thumb for air-drying is *an inch a year* referring to the anticipated period of time required for each inch of thickness. The process can be hastened by the use of kilns. But in 1929, kilns were still a novelty (Elliott, 1938, 34). Rodgers (1928, 841) observed that the main difficulty in providing seasoned timber was the amount of capital required to hold stocks for a sufficient length of time to permit air seasoning. The problem could not be solved by installing seasoning kilns due to the same lack of capital. In addition losses incurred by faulty stacking of timber during air-drying would reduce the returns on capital thus invested. In fact much of the air-drying then practised was considered inefficient and inadequate by an expert who described it as *little better than green storage yards* (Elliott, 1938, 84). Tasmanian mills were singled out by Lane-Poole (1928, 98) as extreme examples of this Australia wide problem:

> *The inefficient mills are the main causes of inferior timber being placed on the market. They are insufficiently financed to bear the cost of seasoning their timbers and are forced to realise "off the saw" to meet wages.*

Undercapitalization was a contributing factor but the effect of attitudes were equally important. In spite of early knowledge, writers from Curr (1824) to Rodgers (1928) reveal the level of knowledge available, the frequent failure to put it into practice and the resultant complaints about the inferior artcle. Even for the overseas market where it was known that an assured minimum standard was essential this casual attitude persisted as was bluntly noted by an official government publication on the Tasmanian Timber industry:

> *Little, if anything, is done by sawmillers in regard to a systematic seasoning of timber for export, although there is not one of them*

> *but will admit that if such a practice were adopted both the appearance ... and its value ... would be considerably enhanced. The time is not far distant when this subject will require serious consideration at the hands of those connected with the Timber Industry.*
>
> *Tasmanian Forestry, 1910, 42.*

Rodgers' conclusions in 1928 regarding the need for action and the responsibility for it echoed the assessments and advice proferred by Penny in 1910 and by Perrin in 1887.

Tasmania was as tardy in undertaking extensive research into the problems of seasoning as it was in applying the findings. This again reflected the nature of the industry and the economic climate of the times. Research was expensive in time and money. The government while prepared to organise some form of quality control through inspections paid for by the industry but was not prepared to invest in research. A few enterprising Victorians experimented with kiln-drying. In 1910, the state government took over one of these experiments and Victoria was reaping the benefits by 1930 though prejudice was initially strong and had delayed the adoption of kilns (Elliott, 1938). Admirable though this was it fell far short of the thorough, systematic research being undertaken concurrently in South Africa. Plagued by the lack of suitable indigenous forests, the South African government experimented with various species, including Australian eucalypts, under plantation conditions. A detailed report of the findings on the best way to treat various eucalypts, particularly Tasmanian blue gum, was presented to the British Empire Forestry Conference in Canberra (Scott, 1928). The following year saw the establishment of an Australian government department, the Division of Forest Products, C.S.I.R., which began by concentrating on the problems of seasoning.

While all eucalypt timbers are difficult to season, Tasmanian regrowth eucalypts are more extreme thus increasing the need for care. Timber felled, cut and stacked to begin the drying out process over the summer was observed to react badly. A strong moisture gradient developed within timber exposed to rapid surface drying and excessive deformation resulted. Other conditions possibly related to cell structure and moisture content reflecting the rates of growth in several species may make Tasmanian timbers more susceptible to this extreme form of seasoning problems. If the lack of a market for timber cut at this time forced temporary closure then this imposed an extra cost burden on production. The Tasmanian Railways wrote date restrictions into all contracts for sleepers. The permissible period of cutting extended from the first of April to the end of September (*Tasmanian Forestry*, 1910, 53).

The degree of seasoning is not the sole criterion for quality. Care in cutting and sorting were also important. It was claimed (*Tasmanian Forestry*, 1910, 51) that *sawmillers do not exercise sufficient care in cutting to specifications of dimensions, or to avoid blemishes.* This had an adverse affect on demand even in cases where Tasmanian timber was otherwise preferred.

At the core of the problem was an industry incapable of or unwilling to control the quality and marketing of its products and a government not prepared to run counter to the prevailing *laissez-faire* attitude to private enterprise. Yet the government owned most of the resource upon which this inefficient exploitation was based. Legislation had made little impact; the situation was one that needed enforcement and in this the government failed. Many were of the opinio that government control of the forest and of aspects of the industry was the only way to achieve the full potential of the forest.

The industry was undercapitalized. However, it was further handicapped by its failure to organise capital labour and resources to maximum advantage. Major deficiencies were of two types, the quality of the product and marketing. After a decade of sustained contact with the highly exacting overseas markets, adequate adjustments had not eventuated consequently *one of the principal difficulties in extending the timber trade of Tasmania* was *decidedly the uncertain*

quality of the timber (Target, 1902, xviii). Marketing required public relations campaigns as well as the efficient organization of the system of distribution and wholesaling outlets at one end and the assembly and despacch of goods at the other. But entrepreneurial skills were in short supply. Marketing, particularly for interstate, suffered from a lack of organization. The government which had access to sufficient funds lacked the incentive to engage in the sustained promotional activity necessary to open up new markets overseas. Improvements at each end of the interaction were greatly needed if the trade was to expand. Western Australia had provided a successful example of another approach for its *great trade* had *evolved by advertisement and strict adherence to grade* (Rodgers, 1928, 843). The lack of capital, initiative and organization are seen as major factors accounting for the decline experienced in the second half of the nineteenth century and as contributing to the decline in the second decade of the twentieth century. The largest mills which created the growth of the period of consolidation did not lack these factors and were able to produce a better product, one for which there was a demand.

The Tasmanian Timber trade from 1830 to 1930 experienced varying degrees of difficulty in meeting the conditions which were essential for complementarity. Limitations on the trade arose from the nature of the product, the industry and the shipping links and also from slow diffusion of information, competition and consumer preference. Demand has been the major factor controlling the size and nature of the Tasmanian timber trade. Initially, there was little scope for substitution in the small colonial market, but for most of the century, the variation in exports can be explained by fluctuations in constructional activity and by the extent to which

substitution occurred. Negative changes displaced Tasmanian timbers in interstate markets whilst positive change enabled special purpose timbers to be used in distant places.

If complementarity based either on spatial differentiation or on price differentials exist, then the level of trade depends on the potential for and extent of substitution. Ullman (1956, 868) described two factors which created conditions favourable to substitution. These were the factor of intervening opportunity which resulted in a substitution of areas and the factor of transferability which resulted in a substitution of products. Both occurred in this example of spatial interaction but in themselves provide only a partial explanation of the experience of the Tasmanian timber trade. Two additional factors, behavioural aspects and the nature of the product were crucial. Models of international trade assume a uniform product but allow spatial variation in cost structure. This simplifying assumption cannot be accepted for timber flows.

Eucalypt timbers are disadvantaged by negative consumer attitudes as well as the high costs of preparation and transport. The lower costs of supply and transferability for softwoods increase the range of their opportunities for movement, and the opportunity surface for softwood is of far greater extent than is possible for eucalypts under conditions of parity of price. The widespread consumer preference for softwoods assuming equal suitability for the task has resulted in a greater number of linkages to potential markets on that opportunity surface. Flows of information had the potential to modify the interactions for better or worse.

In addition to problems inherent in the timber, the Tasmanian timber trade suffered from self-imposed difficulties arising from the nature of the industry and the role played by the government. The structure of the industry determined the quality, quantity and price of the timber. These factors significantly affected the desiderata of Tasmanian timber as judged by the market. The Tasmanian industry lacked capital, enterprise and organization for most of the century studied. The entry of British capital about the turn of the century increased the scale of activity and hastened the organization

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for overseas markets but orderly marketing for the nearer Australian markets remained a pipe-dream.

The Tasmanian timber trade has exhibited continuity to a striking degree. It has continued to supply general purpose timbers to the same major markets. The trade has undergone great change in scale but the determining factors shaping that trade have remained unchanged. However, the detail and the relative importance of these factors has been modified by changing circumstances. Technological innovations have been of great significance in this change as they provided the potential for the substitution of product and area as described by Ullman.

Eucalypt timbers were under particular circumstances highly susceptible to substitution to the detriment of the Tasmanian timber trade. Desiderata for eucalypts as general purpose was relatively low. Only when the particular properties of eucalypts were turned to account either increasing desiderata or reducing the threat of substitution could large scale movements to distant markets be undertaken. Tasmania did not succeed in creating major permanent markets for its timbers beyond its nearest neighbours. Thus the tyranny of distance is very evident in the resultant spatial interaction.

CHAPTER 6 CONCLUSION

The potential of the forest was not realised during the period of study. The Tasmanian timber trade was small in scale and of minor significance to all but Tasmania. The state was endowed with untapped, extensive mature forests close to tidewater and close to growing mainland markets. These enabled an early start but the timber trade failed to grow as its traditional markets grew and Tasmanian timber gave way to substitutes from mainland and overseas forests.

Some of the problems were in the nature of the market which was prejudiced, protectionist and variable, some were in the nature of the timber but most of the causes for this failure were in Tasmania. The government and the timber industry each contributed their share. The government failed the industry through its lack of commitment shown in many ways; its inappropriate land legislation, its neglect of the forest resource and its unwillingness to invest in transport facilities, promotion, and research or to interfere with an inefficient undercapitalized industry. Though some individual efforts were exemplary, the industry, in general, failed to adopt adequate standards of organization, capital and enterprise. It failed to invest in new ideas, to practice the knowledge already at hand or to adjust to the changing nature of the market. The 'good years' after the turn of the century were a period when these failures were partially overcome.

With a similar resource base and experiencing the same difficulties inherent in eucalypt timbers, the comparison between the achievements of Tasmania and Western Australia was instructive. Different attitudes, scale of activity and different levels of enterprise account for the difference in the experiences of each state. Tasmania failed to make the most of its resource base and thereby condemned itself to a minor part in the Australasian timber

trade. Western Australia became the premier timber exporting area. Even South Africa indulged in more experimentation with Australian timbers and obtained the benefits of such endeavours.

The Tasmanian timber trade grew within the context of a pioneering society's search for economic independence based on export staples derived from natural endowments. The development of such trade was conditional upon the existence or creation of complementarity. It has been demonstrated that such conditions existed and that they were capable of expansion. The restrictions limiting the expansion (that occurred) were largely the outcome of the situation which generated the need. Tasmania never outgrew the characteristics typical of a pioneering society. Labour was expensive, capital and enterprise were scarce and only the resource existed in abundance.

The Tasmanian timber trade, though performing at less than its potential, has made a significant contribution to the well-being of Tasmania. The contribution of the forest to the overall economic growth of the state increases when it is placed within the broader context of the local economy. The external timber trade was only a portion of the economic activity supported by the exploitation of the forest. The bulk of timber production was sold to the local market. From 1884 when data is first available, exports have been equivalent to between 20 to 40% of the total sawn production. The exports were able to generate greater returns by utilizing capacity more efficiently and were important in providing an additional stimulus for investment in economies of scale. The timber industry generated much employment and income, and indirectly provided for more. Any depression in the timber industry had its repercussions throughout the wider community.

Amongst the benefits attributable to trade was the multiplier effect on shipping. The large traffic in timber meant an unusually large amount of shipping was employed by Tasmanian traders (Mossman, 1866, 165), a situation that continued until the Great Depression of the 1930's though the change to larger ships had made an impact prior to this. The strong trading links which regular contact created had its consequences in the flow of ideas and peoples. It linked the timber ports of Tasmania directly to the wider world broadening horizons and providing a ready route along which innovation and migration could occur. The movements were both ways. Many Tasmanian lads spent a few years of their youth doing similar work in the forests across the Tasman. Many advances in technique reached Tasmania this way while others left with trained personnel applying the local techniques in the forests of Gippsland and Northern New South Wales.

The procurement and processing of timber became increasingly dependent on technical developments which in turn supported a considerable engineering and metal-working industry. Engineering firms in the larger urban centres supplied the many essential services such as the casting of wheels but fabrication into wagons and so on was largely the prerogative of the blacksmiths employed by the larger saw-mills.

A reciprocal relationship with agriculture contributed further to the state's well-being. Most timber-getters were specialists and self-sufficiency in food was rare. An additional multiplier effect derived from the great demand which existed for animal fodder prior to mechanized land transport. Farmers bought the local timbers for constructional purposes, many even hired casual labour skilled in splitting to provide fencing material from timber on their own land. Orchardists looked to the timber industry for cheap fruit-cases. Often the specialized skills and equipment of the timber industry were used by farmers. Repairs were taken to the blacksmith. Many small-holders depended on the horses essential for logging to provide the motive power to plough their land.

Forest exploitation has aided settlement in several ways. The forest provided for many the first cash returns which in turn financed the early agricultural development of areas accessible to transport. The provision and later extension of the state's infrastructure was in some areas due to forest exploitation. Land transport and jetties, once constructed were also available to agriculturalists. The frequent shipping contacts already established by the timber trade encouraged initial flows of agricultural produce to interstate markets and broadened the opportunities for diffusion of ideas.

The reaction to the forested lands has influenced the spatial and social patterns of settlement now stamped on the land. There was a need to come to terms with the particular combination of environment and culture which existed in Tasmania. The forest has not been easily or cheaply converted to other uses and forests remain an integral part of the Tasmanian scene. The full recognition of the forest's worth whether measured in economic, ecological or asethetic terms had made slow progress against the entrenched attitudes and practices. The limited and restricted development of the timber trade may, however, have been a blessing in disguise. The reduced demand for timber correspondingly reduced the area of forest subjected to destructive exploitation. Sustained yield management which became official policy during the 1920's, promised care of the neglected but extensive resource base. New developments in processing of eucalypts promised the prospect of paper manufacturing, a more lucrative use of wood promising greater job opportunities and greater impact on the local economy. Thus by 1930 the future prospects were brighter and the forest was expected to make an increasing contribution to the fortunes of the state.

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GLOSSARY*

BATTEN — Name indicates size; from 3/4 inch to under 1½ inch thick and from 1 to 3 inches wide of any length.

BEAM — A structural timber used horizontally. A structural timber supported at two or more points.

BOARD — A piece of sawn, hewn or dressed timber of greater width than thickness. Usually 3/8 inch to 1½ inches thick and 3 inches or more wide.

BOX TIMBER, CASE TIMBER — Timber used for the manufacture of boxes or crates.

Dimensions for Tasmania -

Long apple case:	ends	1'2"x7"x7/8"
	sides, top, bottom	2'4"x7"x1/3"
Dump apple case:	ends	1'3"x9½"x7/8"
	sides	1'8"x7"x1/3"
	top, bottom	1'8"x9½"x1/3"

COLLAPSE — Flattening or buckling or wood cells during drying which becomes manifest in excessive and/or uneven irregular shrinkage.

DEAL

1. Board or plank of fir or pine of varying dimensions but exceeding 7 inches in width and six feet in length.
2. A standard deal is a plank 3 inches thick, 9 inches wide and 12 inches long.
3. Such planks collectively.
4. A general term for European softwoods e.g. a deal table, a floor of deal.

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DRESSED TIMBER	Timber is dressed when one or more sides has been planed. Planed surfaces.
DURABILITY	The natural resistance of timber to its various diseases and decay.
FLOORING OR FLOOR BOARDS	Dressed, tongued and grooved boards nailed to floor joists to provide the floor of a house. Usually in 3-, 4- and 6-inch widths and 1-inch thick.
FRAMING TIMBER	Timber used to form the basic structure of a building.
GREEN	A term applied to freshly felled timber, or to timber which still contains free water in its cell cavities. Unseasoned.
GUM VEINS	A ribbon of gum or kino between growth rings which may be bridged radially at short intervals by woody tissue.
HARDWOOD	A conventional term used to denote the timber of broad leaved trees belonging to the botanical group Angiosperms. (Porous woods).
HEART	That portion of the centre of the tree affected by decay or of no appreciable strength.
HEARTWOOD	Wood in which the growing tree has ceased to contain living cells and in which the reserve materials (e.g. starch) have been removed or changed into more durable substances.
HEWN TIMBER	Timber, finished to size by axe or adze; the ends are sometimes sawn.
INDIGENOUS	Applied to timber or trees native to a particular country.
IN THE ROUND	Term applied to logs before sawing. *Round timber* means logs as distinct from sawn or hewn timber.

KNOT

A branch or limb embedded in the tree and cut through in the process of manufacture.

LATH

1. A thin, narrow board or slip of wood, to be nailed to the rafters of a building, for the purpose of supporting the tiles or covering.

2. A thin narrow slip of wood to be nailed to the studs for the purpose of supporting the plastering.

3. A piece of sawn or riven timber 3/16 to 3/8 inch thick and 1 to 1¼ inch wide.

MATURITY

The age, varying with the species and conditions of growth, at which a tree attains its prime and after which the heartwood begins to deteriorate.

MOISTURE CONTENT

The weight of moisture contained in a piece of timber expressed as a percentage of the oven-dry weight.

MOISTURE GRADIENT

A graduation in moisture content between successive layers of timber.

PALING

1. Pale: a narrow board, pointed or sharpened at one end, used in fencing or enclosing; a pointed stake driven into the ground and fastened to a rail at the top of a picket.

2. A fence formed with pales.

3. Boards of particular dimensions; 5 or 6 feet long, 5 or 6 inches wide and 1 to 2 inches thick. Tapering of width was commonplace.

PICKET

1. A stake sharpened or pointed used in fortifications and encampments.

2. A narrow board pointed, used in making fences; a pale or paling; picket-fence.

PILES

Long wooden poles driven into the sea bed as part of wharf construction, and so on, or into the ground to provide foundations for a structure.

PLANK

A loose term applied to boards usually wider than six inches and two inches or thicker. Boat planks: the outer covering of a wooden vessel.

POROUS WOODS

Woods usually from broad-leaved trees containing pores.

Pores are vessels, i.e. the principal vascular or water-conducting elements of hardwoods: these are sometimes visible on the cross-section (end grain) as small round holes.

RAIL

A horizontal member of a frame, sash, door, panelling, fence and so on.

Fence rails were typically 9 feet long, 6 to 7 inches in width and tapered thickness (2 to 1 or ½ inch).

Fence posts 7 feet x 7 inches x 5 inches.

RESIN

An exudation from trees solidified, or partly so, known variously as amber, damar, gum, etc. soluble in ether, turpentine, alcohol, etc. but not in water. Used for varnish, lacquer ...

SCANTLINGS

Timber sawn to dimensions of up to about 6 x 4 (inches).

SEASONING

The drying of timber. The degree of seasoning cannot be stated in terms of period of kiln or air drying, but must be expressed by moisture content to which the timber is dried. The term does not imply the suitability of the timber for any particular purpose.

Air-Dried Timber, Air-Seasoned Timber

Timber that has been dried by stacking in the air.

Kiln-Dried Timber, Kiln-Seasoned Timber

Timber that has been dried in a kiln.

SEASONING CRACK (CHECK)

A separation of timber extending longitudinally and formed during drying. Commonly caused by the immediate effect of dry wind or hot sun on freshly sawn timber.

SHAKE — A partial or complete separation between adjoining layers of timber, due initially to causes other than drying.

SHAPED PIECES — Precise meaning uncertain. Some referred to timber with bends, crooks and forks of dimensions suitable for shipbuilding.

SHINGLE — An oblong piece of wood sawed or rived (split) thin and small with one end thinner than the other, in order to lap lengthwise, used in covering buildings, especially the roof.

SHOOKS

1. A piece of case making timber of a required size.
2. A set of boards for a box.
3. A split stave for a barrel.

SHRINKAGE — Decrease in dimension due to decrease in moisture content.

Tangential (back cut) shrinkage is approximately double that of radial (quarter cut) shrinkage.

SLEEPER — A strong piece of timber laid on the ground to support loads, structures and so on applied in particular to the transverse timbers carrying railway lines.

Dimensions: 7' x 10" x 5"
6'6" x 9" x 5"

SOFTWOOD — A conventional term used to denote the timber of trees belonging to the botanical group Gymnosperms. Commercial timbers of this group are practically confined to the class Coniferae or Conifers.

SPARS — Strong round pieces of timber used for hoisting purposes or for carrying the sails of a vessel.

SQUARED LOG — A log which has been roughly squared up with axe or saw.

STAPLE — Principal commodities produced by a country for exportation and use.

STAVE

A thin narrow piece of wood, intended to form part of a barrel, of which casks are made.

Dimensions: 2'8" x 4" x 1"
3'2" x 5½" x 1 1/16"
4'0" x 4½" x 1"

SUPERFICIAL FEET (sup. super.)

A superficial foot is the equivalent of a square foot one inch thick. (It is sometimes called board measure).

Other units: 1 cubic foot = 12 sup. ft.
1 load = 50 cubic ft.
1 standard = 165 cubic ft.
1 Cord equalled 128 cubic feet

TRENAIL, TREE NAIL

A long wooden pin used in fastening the planks of a tree to the timbers.

Made from straight-grained timber.

UNSTABLE

Applied to timber which varies considerably in size with change in moisture content.

APPENDIX 1A

TIMBER, BARK AND TOTAL EXPORTS OF TASMANIA, 1830 - 1930

DECENNIAL SUMMARY

YEARS	TOTAL £	TIMBER £	TIMBER %	BARK £	BARK %
1830 - 39	2,459,441	27,492*		31,148*	
1840 - 49	5,583,348	146,718	2.63	22,400	0.40
1850 - 59	12,315,453	1,462,985	11.88	13,008*	0.11*
1860 - 69	9,016,340	593,585	6.58	117,479	1.30
1870 - 79	10,378,617	631,216	6.08	319,372	3.08
1880 - 89	14,750,678	504,345	3.42	686,151	4.65
1890 - 99	16,110,944	314,257	1.95	411,454	2.55
1900 - 09	33,629,831	861,219	2.56	285,066	0.85
1910 - 1921/22	n.a.	3,035,000 (estimated)		n.a.	
1922/23 - 1929/30	72,636,478	3,714,736	5.11	226,328	0.31
TOTALS	176,881,130	8,256,553	4.67	2,081,258	1.18

STATISTICS OF TASMANIA.

* Records incomplete

PPENDIX 1.B

TIMBER, BARK AND TOTAL EXPORTS OF TASMANIA, 1830 - 1930.

BY VALUE

AR	TOTAL EXPORTS			TIMBER EXPORTS					BARK EXPORTS				OTHER TREE PRODUCTS			TRANS-SH PRODU
	STATE TOTAL	EXPORT VALUES[2] FROM		PERCENTAGE OF TOTAL STATE EXPORTS	TOTAL VALUE	PORTS OF EXIT[2]			PERCENTAGE OF TOTAL STATE EXPORTS	TOTAL VALUE	PORTS OF EXIT[2]		EUCALYPTUS OIL	WILLOW OSIERS	OTHER INCLUDING DRESSED AND MANUFACTURED ITEMS	
	£	HOBART £	LAUNCESTON £	%	£	HOBART £	LAUNCESTON £	OTHERS £	%	£	HOBART £	LAUNCESTON £	£	£	£	£
	145,980															
	141,745															
	157,905															
	152,967															
	203,562															
	320,679								3.70	11,862	n.a.	n.a.				
	420,123								1.45	6,949	357	6,852				
	540,221			0.68	3,655				0.73	4,273	729	3,444				
	581,475			2.02	11,563				0.62	3,538	1,041	2,497				
	875,165			1.40	12,274				0.52	4,526	n.a.					
	867,007			2.84	24,624				0.62	5,381						
	630,601			2.95	18,575				0.48	3,057						
	582,509			1.66	9,693				0.39	2,287						
	439,890			1.01	4,425				0.35	1,537						
	408,799			0.88	3,577				0.92	3,759						
	422,218			1.55	6,537				0.33	1,388						
	582,585			1.52	8,844				0.17	1,007						
	600,876			2.57	15,414				0.20	1,213						
	490,281			4.17	20,464				0.12	902						
	558,682			6.19	34,565				0.33	1,869						
	613,850			9.10	55,859					n.a.						
	665,790			4.92	32,726					n.a.						
1	,509,883			5.93	89,507					n.a.						
1	,756,316			25.23	443,161					n.a.						
1	,433,021			21.34	305,787				0.24	3,391					255 FIREWOOD, 240, 5 HOUSES	575 SPAR
1	,428,629			6.90	98,546					n.a.						
1	,207,802			9.34	112,753					n.a.						
1	,354,665	660,470	694,185	9.88	133,773	106,790	26,983		0.26	3,551	254	3,297				
1	,151,609	534,555	617,054	9.54	109,901	75,674	34,227		0.11	1,310	503	807				200 SAWN
1	,193,898	554,547	639,351	6.78	80,972	52,680	28,292		0.40	4,756	1,260	3,496				1150 SAWN
	962,170	478,262	483,908	7.66	73,726	46,525	27,201		0.86	8,240	2,970	5,270				
	905,463	449,473	455,990	6.17	55,850	37,555	18,295		0.27	2,425	675	1,750				
	919,649	463,916	455,733	7.26	66,755	48,440	18,316		0.36	3,348	440	2,908				
	999,511	523,850	475,661	6.99	69,845	49,060	20,785		0.53	5,283	820	4,463		82	431 DOORS, SASHES	
	975,730	506,891	468,839	8.33	81,265	63,505	17,760		0.77	7,528	2,265	5,263		105		
	880,965	462,965	418,000	6.44	56,678	35,735	20,943		1.31	11,570	1,760	9,810		57	42 HURDLES, CASKS	
	834,606	460,735	373,871	5.48	45,731	29,650	16,081		1.73	14,461	2,505	11,956		20		
	790,494	465,990	324,504	6.55	51,747	27,610	24,137		2.42	19,152	2,860	16,292		203		
	920,820	418,810	502,010	5.36	49,390	34,270	15,120		2.21	20,345	4,005	16,340		190		
	826,932	406,960	419,972	5.15	42,597	27,645	14,972		3.04	25,127	8,565	16,562		176	20 FELLOES	

648,709	346,504	302,205	5.74	37,267	27,080	10,182	3.67	23,833	6,385	17,448		422	190 CASKS					
746,638	387,055	353,583	6.65	49,260	34,300	14,960	2.42	17,933	5,770	12,163		372	295 BARREL HEADS					
910,663	494,272	416,391	5.12	46,614	27,775	18,839	3.69	33,574	7,900	25,674		524	CASKS					
893,556	506,375	387,181	7.08	63,246	44,280	18,966	3.41	30,485	7,030	23,455		558						
925,329	480,775	444,550	8.15	75,422	52,811	22,611	2.39	22,123	7,214	14,909		866						
1,085,976	589,802	496,174	8.16	88,645	66,112	22,533	3.73	40,542	12,775	27,817		609						
1,130,983	595,076	535,907	5.76	65,151	45,410	19,741	4.92	55,601	12,638	42,963		940	34 FIREWOOD					
1,416,975	720,136	696,839	5.15	72,909	53,652	19,257	2.35	33,349	13,410	19,939		913						
1,315,695	609,865	705,830	5.55	72,989	55,904	17,085	2.37	31,132	11,143	19,989		276						
1,310,097			4.56	59,713			2.35	30,800				--						
1,511,931			3.44	51,973			1.87	28,214				--	5 FIREWOOD					
1,555,576			3.64	56,577			3.11	48,419				--						28 SHA
1,589,389			3.32	52,688			3.59	56,910			n.a.	--						50 KAU
1,721,569			2.66	45,275			5.36	92,758			n.a.	869	157 CASKS					
1,475,857			3.36	49,623			5.87	86,689			n.a.	--	12 GUM					1275 SAW
1,313,693			3.35	44,046			6.35	83,580				1,031						
1,331,540			2.69	35,765			5.98	79,606				1,588						
1,449,374			2.47	35,792			4.20	60,898				1,619						
1,333,865			5.21	69,445			4.64	61,829				1,753						
1,459,857			4.33	63,161			5.98	87,248				1,426						
1,486,992			2.58	38,302			5.87	87,137				1,669						
1,440,818			2.98	42,904			4.45	64,230			n.a.	1,648						
1,346,965			2.42	32,736			2.83	38,212			n.a.	747						
1,352,184			1.26	17,054			2.90	39,166			2,310	1,036						
1,489,041			1.31	19,507			2.15	32,039			596	840						
1,373,063			2.28	31,372			2.46	33,753			3,096	1,313	20 GUM					
1,496,576			2.12	31,664			1.90	28,429			6,972	1,333						
1,744,461			1.95	34,013			1.52	26,429			2,864	1,643						
1,803,359			1.51	27,162			1.72	31,017			5,201	1,833						
2,577,475			1.53	39,543			1.20	31,042			2,942	1,388						
2,610,617			1.53	40,058			1.13	29,405			3,160	2,155						
2,945,757			1.55	45,630			1.11	32,773			n.a.	1,423						
3,244,508			1.14	37,113			1.24	40,190			355	1,350						
2,643,108			1.51	42,830			1.16	32,843			n.a.							37 SAW
2,989,600			2.62	78,380			1.02	30,476			n.a.	1,351						
3,711,616			2.44	90,547			0.52	19,247			1,404	1,388						
3,752,501			2.49	93,610			0.68	25,612			981	1,884						
4,076,953			2.98	121,356			0.60	24,424			937	1,474						
4,030,766			4.06	163,532			0.64	25,675			763	26,723						
3,424,405			4.33	148,163			0.71	24,421			1,048	23,172						
												6,021	DRESSED TIMBER					
	OVERSEAS										OVERSEAS	OVERSEAS						
n.a.	520,495			***							301	--						
	635,223			150,000							327	--						
	507,414			235,000							206	--						
	522,865			250,000							--							
	578,462†			250,000							n.a.	n.a.						
	426,252			240,000							420	2						
	612,119										142	1						
	698,511			225,000							241	--						
	951,566			225,000							1,870	--						
				185,000							--	--						

TIMBER, BARK AND TOTAL EXPORTS OF TASMANIA, 1830 - 1930.

BY VALUE

TOTAL EXPORTS			TIMBER EXPORTS					BARK EXPORTS				OTHER TREE PRODUCTS		
STATE TOTAL	EXPORT VALUES[2] FROM		PERCENTAGE OF TOTAL STATE EXPORTS	TOTAL VALUE	PORTS OF EXIT[2]			PERCENTAGE OF TOTAL STATE EXPORTS	TOTAL VALUE	PORTS OF EXIT[2]		EUCALYPTUS OIL	WILLOW OSIERS	OTHER INCLUDING DRESSED AND MANUFACTURED ITEMS
	HOBART	LAUNCESTON			HOBART	LAUNCESTON	OTHERS			HOBART	LAUNCESTON			
£	£	£	%	£	£	£	£	%	£	£	£	£	£	£
	1,329,583			400,000										
	2,067,443			360,000	n.a.	n.a.	n.a.			n.a.	n.a.	n.a.		
7,984,565			5.81	463,635	168,542	104,157	190,936	0.32	25,474	16,659	8,815			7,603 WOOD & WICKER MANUFACTU
8,843,227			6.77	599,030	236,838	117,146	244,492	0.38	33,229	23,066				8,785 WOOD MANUFACTURES
8,848,773			6.45	570,285	222,070	104,208	*243,028	0.29	25,561	15,475	10,009			
8,710,855			6.26	545,718	*191,922	*123,437	*230,239	0.31	26,646	20,333	6,313			
9,437,771			5.26	496,711	*216,420	*110,415	*169,730	0.39	36,948	24,863	12,085			
9,960,947			3.58	356,664	151,983	73,982	130,699	0.39	38,825	21,227	12,598			
9,783,366			3.50	342,078	137,859	81,846	122,339	0.24	23,541	15,068	8,473			
9,088,014			3.75	340,615	132,742	70,588	137,172	0.18	16,104	9,956	6,148			

'OVERSEAS' refers to places outside the present Commonwealth of Australia.
'PORT OF EXIT' includes all ports under the jurisdiction of the relevant Marine Board.
Minor discrepancies in annual timber export values for that year; in all cases that given is the aggregate value derived from the detailed export data.
Classification change.
State timber export totals 1910 - 1921/22 are interpolated from a graph in the Forestry Handbook 1928, 16.
1914 - six months only; thereafter the financial year is used.
Not available.

STATISTICS OF TASMANIA

APPENDIX 2 A.

TOTAL AND TIMBER IMPORTS, TASMANIA 1844 - 1930[1]

BY VALUE

YEAR	TOTAL IMPORTS	TIMBER IMPORTS								
		SHARE OF TOTAL STATE IMPORTS	VALUE	QUANTITY	PRODUCT					
	£	%	£	Sup. Ft.	CEDAR £	DEALS £	TIMBER £			
1844	442,948	0.44	1,948							
45	520,562	1.10	5,728		2,030	1,123	2,575			
46	561,238	1.01	5,684		852	830	4,002			
47	724,593	0.68	4,892		1,676	602	2,596			
48	594,154	0.49	2,689		590	602	1,497			
49	573,730	0.46	2,639							
1850	658,540	0.68	4,475							
51	641,609	0.72	4,634							
52	860,488	0.16	1,341							
53	2,273,307	1.06	24,057							
54	2,604,680	1.16	30,230	1,464,600+	5,770		24,460			
55	1,559,797		n.a.							
56	1,442,106		n.a.							
57	1,271,087	1.98	25,174	6,016,980+	4,045	11,226	9,903			
58	1,328,612	2.16	28,673	11,855,660	4,110	7,866	16,678			
59	1,163,907	1.47	17,110	8,342,400	900	5,390	10,820			
1860	1,060,411	1.11	11,864	732,000	20	1,830	10,014			
61	953,517	0.67	6,384	2,398,560	780	530	5,074			
62	857,423	1.19	10,240	3,082,152		520	9,720			
63	902,940	0.81	7,345	678,900		3,200	4,145			
64	908,265	0.68	6,194	3,075,144	115	4,014	2,065			
65	762,375	1.14	8,695	834,960		4,765	3,930			
66	882,107	0.70	6,211	511,944		2,702	3,509			
67	856,348	0.63	5,424	434,100	1,430	1,014	680			
**							BOARDS	GREATER THAN 3 INCHES THICK	LESS THAN 3 INCHES THICK	CASE MAKIN
1868	845,152	0.58	4,863	1,524,036	550	1,779	183	1,604	706	
69	975,412	0.64	6,287	614,112	220		1,520	3,295	1,152	
1870	792,916	1.09	8,626	957,924	270		2,094	4,474	1,788	
71	778,087	0.85	6,604	665,580	260		1,375	4,186	783	
72	807,182	0.47	3,813	371,904	345		812	2,125	531	
73	1,107,167	0.56	6,243	650,052	235		1,745	3,565	698	
74	1,257,785	0.64	8,012	887,424	185		935	6,335	557	
75	1,185,042	1.11	13,110	1,150,332	750		4,955	6,785	620	
76	1,133,003	1.17	13,244	1,464,860	210		2,500	9,160	1,374	
77	1,308,671	0.62	8,086	923,880	165		1,145	5,508	1,268	
78	1,324,812	1.01	13,342	1,595,580			5,164	6,714	1,464	
79	1,267,475	1.15	14,627	1,609,692			5,166	7,364	2,077	
1880	1,369,223	1.16	15,897	1,994,802			4,319	8,006	3,465	
81	1,431,144	1.30	18,564	2,656,356			5,905	10,501	2,158	
82	1,670,872	2.09	34,865	3,546,450			13,892	16,852	4,121	
83	1,832,837	1.56	28,564	2,955,845			13,626	13,654	1,284	
84	1,656,118	2.16	35,719	3,482,979			9,989	23,042	3,088	
85	1,757,486	1.99	34,974	2,155,325			11,365	21,936	1,673	
86	1,756,567	1.50	26,347	4,986,500			7,634	17,161	1,552	
87	1,596,817	2.54	41,037	5,305,302			19,363	18,994	2,680	
88	1,610,664	1.34	21,616	3,566,692			6,373	14,338	905	
89	1,611,035	2.13	34,271	4,709,869			11,926	19,413	2,932	
1890	1,897,512	1.84	34,906	4,564,624			12,253	21,695	1,088	
91	2,051,964	1.78	36,444	5,539,271			13,876	19,362	3,206	4
92	1,497,161	0.91	13,580	2,696,462			4,087	8,543	946	
93	1,057,683	0.94	9,963	1,733,591		3,861	4,175	960	73	555
94	979,079	0.38	3,678	712,525		352	2,030	221	16	356
95	1,094,457	0.95	10,424	995,637+		4,495	3,770	1,174	256	126
96	1,192,410	0.60	7,126	1,028,140+		584	2,545	2,944	181	220
97	1,367,808	1.00	13,612	2,130,214		4,246	6,247	2,077	358	47
98	1,650,018	0.94	15,569	2,867,819		1,715	7,918	4,496	645	205
					ASH HICKORY					
99	1,769,324	1.15	20,391	3,706,087	912	4,824	7,957	3,457	579	624
1900	2,073,658	1.12	23,246	4,312,584	384	3,710	10,674	3,802	1,161	623
				£			UNDRESSED	DRESSED		
**1901	1,965,199	1.53	30,115				21,842	8,273		
02	2,442,743	0.64	15,646				5,869	9,777		
03	2,593,816	1.34	34,815				21,056	13,759		
04	2,554,454	1.84	47,016				27,735	19,281		
05	2,651,754	0.85	22,503				11,842	10,661		
06	3,030,514	2.13	64,627				24,974	39,653		
07	3,248,193	1.15	36,739				23,414	13,325		
08	3,371,662	1.33	44,732				26,676	18,056		
09	3,129,873	1.19	37,376				21,017	16,359		
...										
				QUANTITY			UNDRESSED[2]	TIMBER n.e.i.		OTHE
**1922-23	9,103,554	0.65	59,511	3,241,000			41,028	18,178		129
23-24	9,808,693	0.65	63,302	3,793,505			52,189	11,205		
24-25	8,808,460	0.62	54,668	3,661,749			38,475	13,738		
25-26	8,450,793	0.51	42,662	3,465,352			21,021	20,734		
26-27	9,406,273	0.30	28,488	1,756,414			17,666	10,760		66
27-28	9,528,766	0.51	48,867	3,926,525			27,806	19,055		1
28-29	9,235,246	0.50	46,244	2,837,267			21,764	21,184		2
1929-30	9,848,102	0.70	69,035	3,904,312						

STATISTICS OF

1 1910 - 1921/22 omitted.
** Classification change.
Dressed Includes dressed timber, dressed boards and architraves.
2 Undressed Timber is described further as 'bulk timber.'
n.e.i. Not elsewhere included; in this case appears to include 'dressed.'
S Staves.
P Palings.
Casemaking - Short lengths not exceeding 2 cubic feet in measurement.

APPENDIX 2B. PORT OF ENTRY FOR TIMBER IMPORTS, TASMANIA.

1858 - 1878, 1922/23 - 1929/30

YEAR	TOTAL TIMBER IMPORTS		PORTS OF ENTRY					
			HOBART		LAUNCESTON		OTHER	
	£	%	%	£	%	£	%	£
1857	25,174	100.00	67.82	17,072	32.18	8,102		
58	28,673	100.00	60.67	17,395	39.33	11,278		
59	17,110	100.00	47.87	8,190	52.13	8,920		
1860	11,864	100.00	31.27	3,710	68.73	8,154		
61	6,384	100.00	22.40	1,430	77.60	4,954		
62	10,240	100.00	51.62	5,286	48.38	4,954		
63	7,345	100.00	71.27	5,235	28.73	2,110		
64	6,194	100.00	37.54	2,325	62.46	3,869		
65	8,695	100.00	61.13	5,315	38.87	3,380		
66	6,211	100.00	17.40	1,080	82.60	5,131		
67	5,424	100.00	47.20	4,120	52.80	1,304		
68	4,863	100.00	33.42	1,625	66.58	3,238		
69	6,287	100.00	61.87	3,890	38.13	2,397		
1870	8,626	100.00	45.33	3,910	54.67	4,716		
71	6,604	100.00	54.30	3,585	45.70	3,019		
72	3,813	100.00	38.95	1,485	61.05	2,328		
73	6,243	100.00	43.33	2,705	56.67	3,538		
74	8,012	100.00	56.10	4,495	43.90	3,517		
75	13,110	100.00	49.89	6,540	50.11	6,570		
76	13,244	100.00	48.78	6,460	51.22	6,784		
77	8,086	100.00	52.99	4,285	47.01	3,801		
78	13,342	100.00	45.01	6,005	54.99	7,337		
...								
1922-23	59,511	99.99	58.33	34,714	22.67	13,493	18.99	11,304
23-24	63,392	100.00	65.23	41,350	21.89	13,879	12.88	8,163
24-25	54,688	94.26*	59.76	32,682	20.26	11,081	14.14	7,786
25-26	42,682	99.92*	54.32	23,186	24.00	10,244	21.68	9,252
26-27	28,488	100.00	49.75	14,172	29.08	8,285	21.17	6,031
27-28	48,867	99.99	43.74	21,375	43.53	21,274	12.72	6,218
28-29	46,244	100.00	37.52	17,352	44.11	20,399	18.37	8,493
1929-30	69,035	100.00	25.65	17,706	46.44	32,059	27.91	19,270

STATISTICS OF TASMANIA

* Discrepancies between 'Trade of Tasmanian Ports' total and detailed state export total.

APPENDIX 3 OTHER PRINCIPAL EXPORTS, TASMANIA

YEAR	WOOL %	GRAIN, HAY FLOUR & BRAN %	FRUIT JAMS VEGETABLES %	WHALE OIL & BONE %	MINERALS GOLD %	TIN %	SILVER %	COPPER %
1830	20.00							
31	40.7							
32	39.5							
33	41.3							
34	N.A.							
35	44.6							
36	40.7			16.03				
37	40.9	6.50	0.81	16.44				
38	29.5	8.91	1.77	23.57				
39	22.2	25.47	1.99	13.61				
1840	25.8	26.00	2.96	10.82				
41	40.4	15.58	1.89	15.81				
42	40.5	22.38	2.39	11.01				
43	44.0	21.79	1.71	10.96				
44	43.1	20.71	-	13.26				
45	42.3	16.62	1.20	10.24				
46	36.7	27.42	2.12	8.48				
47	41.2	23.53	1.62	11.20				
48	39.8	20.72	2.25	10.05				
49	36.2	20.52	3.14	6.77				
1850	40.5	19.30	3.83	8.07				
51	37.5	25.93	5.77	7.36				
52	16.2	17.67	3.18	2.44				
53	18.6	17.94	7.03	1.71				
54	22.7	23.85	7.42	1.94				
55	26.5	29.53	11.46	3.09				
56	26.5	25.16	5.51	4.44				
57	29.1	28.69	7.99	3.41				
58	34.5	25.03	10.89	4.33				
59	39.2	25.36	7.71	5.32				
1860	38.5	22.32	11.01	5.96				
61	36.1	23.41	9.26	6.65				
62	39.8	22.09	9.53	6.60				
63	40.8	15.13	14.02	3.02				
64	42.6	16.13	15.76	2.04				
65	43.3	14.00	11.60	2.78				
66	46.2	13.28	11.83	4.37				
67	47.9	12.57	12.26	2.88				
68	43.3	21.98	12.06	5.71				
1869	36.7	15.31	18.41	5.91				
1870	38.0	13.37	16.77	5.53	1.15			
71	40.3	17.28	12.07	6.26	1.92			
72	47.7	11.01	10.18	3.01	1.75			
73	35.2	16.57	12.72	4.92	1.71			
1874	37.9	13.36	14.30	3.33	1.92	0.8		
75	39.9	11.97	13.31	1.15	1.27	2.88		
76	38.9	5.79	13.94	3.69	3.70	8.81		
77	36.9	6.61	12.44	2.23	1.90	20.96		
78	36.7	2.85	13.07	1.29	4.49	20.04		
79	31.1	1.86	14.70	1.03	11.20	23.30		
1880	35.86	2.65	9.91		13.34	22.60		
81	32.04	1.53	12.51		13.58	24.16		
82	27.26	6.75	15.56		10.14	22.74		
83	26.01	2.14	12.78		10.02	21.74		
84	30.73	2.19	14.25		8.94	20.42		
85	19.83	1.15	17.16		10.76	27.22		
86	23.35	4.16	18.77		7.84	27.29		
87	28.66	1.18	15.06		9.70	28.14		
88	23.01	0.88	11.80		9.56	31.96		
89	19.40	5.18	20.76		8.46	22.66		
1890	28.19	2.48	16.29		5.86	19.96	1.13	
91	29.04	1.08	12.73		9.23	20.35	4.31	-
92	27.78	4.00	15.76		10.96	21.86	5.97	-
93	21.92	2.04	15.36		9.70	19.68	11.38	3.40
94	17.69	1.03	18.36		14.30	13.60	14.47	7.43
95	14.74	3.58	17.46		15.90	12.22	16.60	0.70
96	19.44	4.91	20.67		15.51	10.63	14.90	0.11
97	14.91	1.57	18.64		12.98	8.49	12.22	17.89
98	14.14	4.60	19.64		10.45	7.84	9.29	20.99
99	13.77	6.44	13.19		7.75	10.85	8.04	29.33
1900	10.01	2.35	14.96		7.94	10.38	9.66	34.54
01	9.52	3.46	17.62		6.93	7.22	11.04	34.86
02	8.11	10.14	24.38		5.45	7.33	11.93	21.89
03	6.85	8.08	22.62		4.43	10.85	15.06	18.00
04	13.45	2.17	15.98		6.28	8.61	10.67	19.94
05	10.56	1.93	24.01		8.43	9.94	11.19	15.18
06	11.68	1.70	17.31		5.83	15.04	12.85	17.77
07	9.85	3.94	17.18		6.20	13.04	14.05	16.23
08	11.78	5.67	24.32		7.26	9.93	9.19	13.53
09	11.72	4.79	21.93		4.96	12.22	9.76	13.19
1922/23	11.02	6.69	27.32			3.81	2.96	4.46
23/24	12.01	3.56	26.62			2.54	1.94	4.31
24/25	15.66	2.44	21.14			2.49	2.04	3.70
25/26	9.36	1.62	24.60			2.75	2.09	3.99
26/27	9.31	2.61	29.97			3.12	1.50	3.85
1927/28	10.97	3.57	25.62			2.15	0.90	2.95
28/29	11.47	1.94	25.43			1.73	1.21	5.23
29/30	6.92	2.27	24.42			0.72	0.98	6.54

PENDIX 4A.

AUSTRALIA: TIMBER EXPORTS 1898, 1899 and 1900.

THE VALUE AND DESTINATION OF STATE EXPORTS.

	NEW SOUTH WALES			VICTORIA			QUEENSLAND			SOUTH AUSTRALIA			WESTERN AUSTRALIA			TASMANIA			AUSTRALIA		
	1898 £	1899 £	1900 £	1898 £	1899 £	1900 £	1898 £	1899 £	1900 £	1898 £	1899 £	1900 £	1898 £	1899 £	1900 £	1898 £	1899 £	1900 £	1898 £	1899 £	1
th Wales	---	---	---	13,334	10,507	18,305	4,112	4,031	9,228	62,733	57,736	65,075	6,437	3,820	804	6,219	2,836	6,533	92,835	78,930	99
a	8,732	15,597	16,526	---	---	---	1,375	970	6,223	67	207	145	2,706	7,441	1,507	6,632	6,639	12,351	19,512	30,854	36
and	21,125	28,460	23,516	702	616	457	---	---	---	14	8	8	---	---	---	503	587	310	22,344	29,671	24
ustralia	4,561	16,000	7,233	3,591	2,887	3,551	493	241	352	---	---	---	21,277	33,383	42,238	6,605	11,593	8,072	36,527	64,104	61
a	5,817	7,351	3,915	3,082	4,257	4,224	36	---	---	---	---	25	---	---	---	---	---	---	8,935	11,638	8
Australia	4,596	4,645	5,858	2,252	2,361	7,446	160	76	140	1,705	1,152	2,115	---	---	---	---	---	---	8,713	8,234	16
IA	44,831	72,083	58,048	22,961	20,628	33,983	6,176	5,318	15,943	64,519	59,103	67,368	30,420	44,644	44,549	19,959	21,655	27,276	188,866	223,431	247
land	34,161	37,074	39,225	1,606	1,526	1,741	---	---	8	---	30	---	---	---	172	7,563	9,071	10,671	43,330	47,701	51
Kingdom	11,949	12,592	7,037	510	83	40	50	163	675	295	124	---	189,416	385,009	187,464	173	5,514	---	202,393	403,485	195
	3,698	4,409	6,027	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3,898	4,409	6
n Dominion	---	66	171	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	65	
ng	---	16	14	---	---	---	10	150	456	---	3	---	---	3,130	160	---	---	---	10	3,299	
	4	---	---	---	---	25	---	---	---	---	---	---	7,191	18,014	28,551	---	---	---	7,195	18,014	28
Island	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	4	---	
re	---	---	---	---	---	---	---	---	---	---	---	---	1,255	7,016	16,906	---	---	---	1,255	7,016	16
frica	244	636	4	2	1	97	---	---	---	---	---	---	89,711	75,914	94,799	1,300	4,691	4,258	91,257	81,242	99
ia (New)	5,562	6,393	8,126	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5,562	6,393	8
e Islands	---	---	1,320	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
	---	---	437	---	---	---	1,588	602	980	---	---	---	---	---	4	---	---	---	1,588	602	1
	---	---	---	132	808	408	---	---	---	---	---	---	---	12	408	---	---	---	132	820	
	---	---	941	---	---	25	---	23	---	---	---	---	---	---	---	---	---	---	---	23	
Island	---	---	---	87	315	176	---	---	---	---	---	---	---	---	---	---	---	---	87	315	
us	---	---	---	---	215	---	---	---	---	---	---	---	1,037	3,004	3,246	---	---	---	1,037	3,219	3
tain	2,379	2,515	1,610	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2,379	2,515	1
nea	1,023	1,945	3,630	---	---	---	311	507	44	---	---	---	---	---	---	---	---	---	1,334	2,452	1
ine Island	---	---	1,042	---	---	---	---	---	---	---	---	---	---	---	4,013	---	---	---	---	---	
ea Islands	3,785	4,680	5,337	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3,785	4,680	1
States	578	755	383	---	---	---	---	---	---	---	5	52	---	---	---	---	---	---	578	760	
ne Republic	---	---	---	---	---	---	---	---	---	---	---	---	2,935	8,442	65,738	---	---	---	2,935	8,442	6
	---	---	---	---	---	---	---	---	---	---	---	---	---	---	7,618	---	---	---	---	---	
	95	1,002	57	---	---	---	---	---	---	---	---	---	---	1,200	---	---	---	---	95	2,202	
	185	138	---	17	---	---	---	---	---	79	---	---	4,230	6,553	4,183	---	---	---	4,511	6,691	
	1,395	1,630	6,314	---	---	---	---	---	---	55	200	---	---	260	1,053	---	---	---	1,450	2,090	
£	110,093	145,934	139,723	25,315	23,576	36,495	8,135	6,763	18,106	64,948	59,465	67,420	326,195	553,198	458,854	28,995	40,931	42,205	563,681	829,867	76

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APPENDIX 4B

AUSTRALIA: TIMBER EXPORTS 1898, 1899 and 1900.

THE VALUE AND DESTINATION OF STATE EXPORTS BY PERCENTAGE

	NEW SOUTH WALES			VICTORIA			QUEENSLAND			SOUTH AUSTRALIA			WESTERN AUSTRALIA			TASMANIA			AUSTRALIA		
	1898 %	1899 %	1900 %	1898 %	1899 %	1900 %	1898 %	1899 %	1900 %	1898 %	1899 %	1900 %	1898 %	1899 %	1900 %	1898 %	1899 %	1900 %	1898 %	1899 %	1900 %
New South Wales	---	---	---	52.68	44.57	50.16	50.55	59.60	50.97	96.59	97.09	96.52	1.97	0.69	0.18	21.45	6.93	15.48	16.47	9.51	13.10
Victoria	7.93	10.69	11.83	---	---	---	16.90	14.34	34.37	0.10	0.35	0.22	0.83	1.35	0.33	22.87	16.22	29.29	3.46	3.72	4.82
Queensland	19.19	19.50	16.83	2.77	2.61	1.25	---	---	---	0.02	0.01	0	---	---	---	1.73	1.43	0.73	3.96	3.58	3.18
South Australia	4.14	10.96	5.18	14.19	12.25	9.73	6.06	3.56	1.94	---	---	---	6.52	6.03	9.20	22.78	28.32	19.13	6.48	7.72	8.06
Tasmania	5.28	5.06	2.80	12.18	18.06	11.57	0.44	---	---	---	---	0.04	---	---	---	---	---	---	1.59	1.40	1.07
Western Australia	4.17	3.18	4.91	8.90	10.01	20.40	1.97	1.12	0.77	2.63	1.94	3.14	---	---	---	---	---	---	1.55	0.99	2.17
AUSTRALIA	40.72	49.39	41.55	99.72	87.50	93.12	75.92	78.63	88.05	99.34	99.39	99.92	9.33	8.07	9.71	68.84	52.91	64.63	33.51	26.92	32.40
New Zealand	31.03	25.40	28.07	6.35	6.47	4.77	---	---	0.04	---	0.05	---	---	---	0.04	26.08	22.16	25.28	7.69	5.75	6.79
United Kingdom	10.85	8.63	5.04	2.02	0.35	0.11	0.61	2.41	3.73	0.45	0.21	---	58.07	69.60	40.85	0.60	13.47	---	35.91	48.62	25.59
Fiji	3.54	3.02	4.31	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.64	0.53	0.79
Canadian Dominion	---	0.05	0.12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.01	0.02
Hong Kong	---	0.01	0.01	---	---	---	0.12	2.22	2.52	---	---	---	---	0.57	0.03	---	---	---	---	0.40	0.08
India	0	---	---	---	---	0.07	---	---	---	---	---	---	2.20	3.26	6.22	---	---	---	1.28	2.17	3.75
Norfolk Island	0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Singapore	---	---	---	---	---	---	---	---	---	---	---	---	0.38	1.27	3.68	---	---	---	0.22	0.85	2.22
South Africa	0.22	0.44	0	0	0	0.27	---	---	---	---	---	---	27.50	13.72	20.66	4.48	11.46	10.09	16.19	9.79	13.00
Caledonia (New)	5.05	4.38	5.82	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.99	0.77	1.07
Caroline Islands	---	---	0.94	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.17
China	---	---	0.31	---	---	---	19.52	8.90	5.41	---	---	---	---	---	---	---	---	---	0.28	0.07	0.19
Guam	---	---	---	0.52	3.43	1.12	---	---	---	---	---	---	---	---	0.09	---	---	---	0.02	0.10	0.11
Japan	---	---	0.67	---	---	0.07	---	0.34	---	---	---	---	---	---	---	---	---	---	---	0.00	0.13
Malden Island	---	---	---	0.34	1.34	0.48	---	---	---	---	---	---	---	---	---	---	---	---	0.02	0.04	0.02
Mauritius	---	---	---	---	0.91	---	---	---	---	---	---	---	0.32	0.54	0.71	---	---	---	0.18	0.39	0.43
New Britain	2.16	1.72	1.15	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.42	0.30	0.21
New Guinea	0.93	1.33	2.60	---	---	---	3.82	7.50	0.24	---	---	---	---	---	---	---	---	---	0.24	0.30	0.48
Philippine Island	---	---	0.75	---	---	---	---	---	---	---	---	---	---	---	0.87	---	---	---	---	---	0.66
South Sea Islands	3.44	3.21	3.82	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.67	0.56	0.70
United States	0.53	0.52	0.27	---	---	---	---	---	---	---	0.01	0.08	---	---	---	---	---	---	0.10	0.09	0.06
Argentine Republic	---	---	---	---	---	---	---	---	---	---	---	---	0.90	1.53	14.33	---	---	---	0.52	1.02	8.62
Mexico	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.66	---	---	---	---	---	1.00
Belgium	0.09	0.69	0.04	---	---	---	---	---	---	---	---	---	---	0.22	---	---	---	---	0.02	0.27	0.01
France	0.17	0.09	---	0.07	---	---	---	---	---	0.12	---	---	1.30	1.18	0.91	---	---	---	0.80	0.81	0.55
Germany	1.27	1.12	4.52	---	---	---	---	---	---	0.08	0.34	---	---	0.05	0.23	---	---	---	0.26	0.25	0.97
TOTAL %	100.00	100.00	99.99	100.02	100.00	100.00	99.99	100.00	99.99	99.99	100.00	100.00	100.00	100.01	99.99	100.00	100.00	100.00	99.98	100.01	100.02
£																			563,681	829,867	762,813
Percentage of Australian Total for that Year	19.53	17.59	18.32	4.49	2.84	4.78	1.44	0.81	2.37	11.52	7.17	8.64	57.87	66.66	60.15	5.14	4.93	5.53	99.99	100.00	99.99

PPENDIX 5A.

AUSTRALIA: TIMBER IMPORTS 1898, 1899 and 1900.

THE VALUE AND SOURCE OF STATE IMPORTS BY PERCENTAGE

RY FROM WHICH	NEW SOUTH WALES			VICTORIA			QUEENSLAND			SOUTH AUSTRALIA			WESTERN AUSTRALIA			TASMANIA			AUSTRALIA		
PORTED	1898 %	1899 %	1900 %	1898 %	1899 %	1900 %	1898 %	1899 %	1900 %	1898 %	1899 %	1900 %	1898 %	1899 %	1900 %	1898 %	1899 %	1900 %	1898 %	1899 %	1900 %
outh Wales	--	--	--	2.71	4.52	2.83	60.17	59.39	70.82	1.66	7.28	2.40	8.28	8.97	10.28	16.40	14.42	6.48	2.84	4.78	3.25
ria	4.55	2.85	5.09	--	--	--	1.97	1.44	0.41	1.93	2.39	2.05	7.58	6.55	21.22	24.47	30.56	28.86	2.97	2.30	3.49
sland	0.89	2.03	1.89	0.49	0.48	1.51	--	--	--	0.40	0.19	0.52	0.04	--	0.26	--	--	--	0.59	0.99	1.37
Australia	25.92	27.96	23.22	0.05	0.11	0.05	1.12	0.08	0.06	--	--	--	8.59	5.31	9.98	--	--	--	10.65	11.00	8.91
nia	1.97	0.70	1.63	2.82	1.64	2.53	6.00	4.36	4.37	6.27	10.13	4.37	--	--	0.15	--	--	--	3.01	2.74	2.44
n Australia	0	0.07	--	1.32	0.04	0.10	--	--	0.55	11.67	14.69	12.84	--	--	--	--	--	--	2.69	2.61	2.37
ALIA	33.33	33.51	31.84	7.39	6.79	7.02	69.26	65.27	76.21	21.93	34.67	22.18	24.49	20.83	41.89	40.88	44.98	35.34	22.78	24.42	21.64
ealand	20.70	16.40	20.36	21.71	15.96	14.28	23.64	31.99	21.60	2.17	3.57	3.29	3.21	6.19	2.77	7.80	13.21	12.33	16.33	14.68	14.19
d Kingdom	1.14	0.59	0.85	1.49	0.68	0.18	0.07	0.11	0.21	1.42	1.72	0.59	10.29	1.80	6.64	0.07	0.14	--	1.79	0.85	0.74
n	--	--	--	--	--	0.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.16
ian Dominion	3.16	0.81	0.84	9.77	4.24	9.98	--	--	--	4.42	5.45	5.53	--	12.38	1.57	--	--	--	5.31	3.26	5.17
n	--	--	--	0.02	--	0	--	--	--	--	--	--	--	--	--	--	--	--	0	--	0
	0.02	--	0.21	3.18	0.16	1.21	--	--	--	0.23	0	--	--	--	--	--	--	--	1.10	0.06	0.54
ts Settlement	0.07	--	0.01	--	0	--	--	0	0.30	0.05	0.25	0.20	6.77	5.96	4.17	--	--	--	0.42	0.26	0.20
um	--	0.01	--	0.08	0.15	0.13	--	--	--	--	--	--	--	--	0.05	--	--	--	0.03	0.06	0.05
e	--	--	0.01	--	0	0	--	--	--	--	0.02	--	--	--	--	--	--	--	--	0	0
ny	0.03	0.63	0.23	2.66	1.33	1.39	0.67	0.04	0.37	0.71	0.01	--	0.22	0.03	0.22	--	--	--	1.05	0.73	0.63
	--	--	--	0	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	0	--	0
	0.07	0.05	--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	0.03	0.02	--
	--	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	--
bique	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	--
ledonia	--	--	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0
inea	--	--	--	--	--	--	0.96	0.12	0.29	--	--	--	--	--	--	--	--	--	0.02	0	0.01
y	9.52	8.79	6.39	27.22	39.61	36.48	--	--	--	30.51	11.86	28.37	6.42	11.85	--	--	--	--	18.93	20.31	21.39
a	--	--	--	--	1.27	--	--	--	--		2.24	--	--	--	--	--	--	--	--	0.85	--
Sea Islands	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	--	--
n	--	--	--	3.13	6.55	2.31	--	--	--	--	--	--	35.24	25.48	16.91	33.43	29.90	45.29	3.50	3.81	2.22
d States of America	31.95	37.21	39.26	23.34	23.26	26.60	5.39	2.47	1.01	38.57	40.22	39.85	13.35	15.48	25.77	17.82	11.77	7.04	28.73	30.69	32.85
ber	--	--	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0
%	99.99	100.01	100.00	99.99	100.00	100.00	100.00	100.00	99.99	100.01	100.01	100.01	99.99	100.00	99.99	100.00	100.00	100.00	100.02	100.00	99.99
£																			1,045,814	1,213,315	1,492,014
ntage of Australian for that Year.	39.11	38.65	36.70	32.90	36.37	38.15	1.58	2.18	1.76	19.33	17.50	18.09	5.60	3.62	3.75	1.49	1.68	1.56	100.01	100.00	100.01

DIX 5B

AUSTRALIA: TIMBER IMPORTS 1898, 1899 and 1900.

THE VALUE AND SOURCE OF STATE IMPORTS

	NEW SOUTH WALES			VICTORIA			QUEENSLAND			SOUTH AUSTRALIA			WESTERN AUSTRALIA			TASMANIA			AUSTRALIA		
	1898 £	1899 £	1900 £	1898 £	1899 £	1900 £	1898 £	1899 £	1900 £	1898 £	1899 £	1900 £	1898 £	1899 £	1900 £	1898 £	1899 £	1900 £	1898 £	1899 £	1
les	---	---	---	9,325	19,925	16,094	9,939	15,711	18,648	3,355	15,461	6,474	4,846	3,935	5,747	2,554	2,940	1,506	30,019	57,972	48
	18,594	13,351	27,895	---	---	---	326	380	107	3,892	5,057	5,539	4,438	2,875	11,858	3,810	6,232	6,710	31,050	27,916	52
	3,643	9,518	10,348	1,670	2,129	8,620	---	---	---	818	393	1,397	25	---	143	---	---	---	6,156	12,040	20
lia	105,038	130,649	127,157	181	401	258	185	21	17	---	---	---	5,024	2,330	5,579	---	---	---	111,428	133,491	133
	8,055	3,299	8,950	9,709	7,237	14,417	991	1,153	1,151	12,674	21,502	11,796	---	---	82	---	---	---	31,439	33,191	36
ralia	15	343	---	4,546	156	550	---	---	145	23,579	31,189	34,660	---	---	---	---	---	---	28,140	31,688	35
	136,355	157,170	174,350	25,431	29,938	39,939	11,441	17,265	20,068	44,318	73,612	59,866	14,333	9,141	23,409	6,364	9,172	8,216	238,242	296,298	325
	84,682	86,267	111,456	74,705	70,449	81,294	3,905	8,462	5,689	4,382	7,576	8,666	1,881	2,715	1,549	1,215	2,693	2,866	170,770	178,162	211
ом	4,660	2,777	4,542	5,111	3,002	1,020	12	28	55	2,858	3,647	1,590	6,024	788	3,713	11	28	---	18,686	10,270	11
	---	---	---	---	---	2,360	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2
nion	12,940	3,811	4,585	33,625	18,693	56,789	---	---	---	8,931	11,578	14,912	---	5,432	875	---	---	---	55,496	39,514	77
	---	---	---	53	---	19	---	---	---	---	---	---	---	---	---	---	---	---	53	---	
	63	---	1,166	10,949	726	6,870	---	---	---	465	5	---	---	---	---	---	---	---	11,477	731	8
lements	297	---	50	---	6	---	---	1	80	106	526	533	3,964	2,616	2,333	---	---	---	4,367	3,149	2
	---	49	---	267	653	747	---	---	---	---	---	---	---	---	30	---	---	---	267	702	
	---	---	54	---	2	11	---	---	---	---	35	---	---	---	---	---	---	---	---	37	
	137	2,934	1,244	9,149	5,874	7,899	110	10	97	1,437	27	---	130	14	125	---	---	---	10,963	8,859	9
	---	---	---	4	---	33	---	---	---	---	---	---	---	---	---	---	---	---	4	---	
	277	212	---	---	---	---	2	---	---	---	---	---	---	---	---	---	---	---	279	212	
	---	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6	
	---	35	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	35	
a	---	---	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
	---	---	---	---	---	---	158	33	76	---	---	---	---	---	---	---	---	---	158	33	
	38,951	41,198	35,011	93,640	174,803	207,628	---	---	---	61,664	25,186	76,547	3,754	5,202	---	---	---	---	198,009	246,389	319,
	---	---	---	---	5,599	---	---	---	---	---	4,750	---	---	---	---	---	---	---	---	10,349	
Lands	5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5	---	
	---	---	---	10,780	28,913	13,151	---	---	---	---	---	---	20,620	11,183	9,448	5,205	6,097	10,529	36,605	46,193	33,
s of	130,695	174,493	214,930	80,313	102,640	151,413	891	654	267	77,947	85,391	107,544	7,813	6,798	14,402	2,774	2,400	1,636	300,433	372,376	490,
	---	---	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
	409,062	468,952	547,520	344,027	441,298	569,173	16,519	26,453	26,332	202,118	212,333	269,858	58,519	43,889	55,884	15,569	20,390	23,247	1,045,814	1,213,315	1,492

Commonwealth of Australia, Parliamentary Papers, 1901, Vol. 2, 956.

APPENDIX 6

TIMBER EXPORTS OF WESTERN AUSTRALIA 1850 - 1930

BY VALUE

Year.	Cubic feet.	Value.	Year.	Cubic feet.	Value.
		£			£
1850 ..	10,500	1,048	1890 ..	1,172,200	82,052
1851 ..	1,250	268	1891 ..	1,273,950	89,179
1852 ..	7,050	806	1892 ..	1,082,650	78,419
1853 ..	52,200	5,220	1893 ..	512,950	33,888
1854 ..	58,500	7,023	1894 ..	1,063,700	74,804
1855 ..	76,900	12,076	1895 ..	1,255,250	88,146
1856 ..	70,500	9,671	1896 ..	1,545,600	116,420
1857 ..	69,200	9,449	1897 ..	2,398,300	192,451
1858 ..	29,250	2,340	1898 ..	4,086,150	326,195
1859 ..	67,250	6,051	1899 ..	6,913,550	553,198
1860 ..	54,800	4,932	1900 ..	5,725,400	458,461
1861 ..	27,750	2,497	1901 ..	7,150,600	572,354
1862 ..	68,800	7,151	1902 ..	6,256,750	500,533
1863 ..	32,900	2,963	1903 ..	7,748,450	619,705
1864 ..	58,300	5,508	1904 ..	8,072 300	654,949
1865 ..	183,950	15,693	1905 ..	8,709,500	689,943
1866 ..	85,650	6,849	1906 ..	8,830,700*	708,993
1867 ..	56,750	4,541	1907 ..	6,409,550*	511,923
1868 ..	8,000	638	1908 ..	9,869,500*	813,591
1869 ..	179,900	14,273	1909 ..	10,830,450*	867,419
1870 ..	157,200	17,551	1910 ..	12,074,100*	972,698
1871 ..	218,500	15,304	1911 ..	12,449,500*	986,341
1872 ..	37,000	2,590	1912 ..	11,297,100*	903,306
1873 ..	68,150	4,771	1913 ..	13,619,850*	1,089,481
1874 ..	345,000	24,192	1914† ..	6,279,750*	502,153
1875 ..	342,350	23,965	1915‡ ..	9,963,500*	808,392
1876 ..	219,050	23,743	1916‡ ..	5,432,100	441,991
1877 ..	336,150	36,979	1917‡ ..	3,820,650	310,893
1878 ..	630,900	63,902	1918‡ ..	3,436,250	274,141
1879 ..	627,250	69,742	1919‡ ..	4,135,750	344,119
1880 ..	662,550	66,252	1920‡ ..	5,063,300	487,666
1881 ..	792,750	79,277	1921‡ ..	9,816,250	1,162,735
1882 ..	936,500	93,650	1922‡ ..	8,309,750	1,065,475
1883 ..	997,000	79,760	1923‡ ..	7,911,310	1,009,831
1884 ..	861,700	68,936	1924‡ ..	11,126,861	1,379,022
1885 ..	848,150	67,850	1925‡ ..	11,844,303	1,491,925
1886 ..	626,150	50,092	1926‡ ..	12,001,384	1,535,030
1887 ..	354,800	28,384	1927‡ ..	12,580,262	1,650,976
1888 ..	525,750	42,060			
1889 ..	788,500	63,080			
			Total 1836-1927	273,694,970	25,499,236

* Approximate figures only. † Six months ended 30th June. ‡ Year ended 30th June.

KESSELL, S.L., 1928, The Hardwoods of Western Australi
their Markets, in Lane-Poole, C.E., 1928, Hard
and their Markets (Australia), Third British E
Forestry Conference, 116 - 117.

1928 £1,265,500
1929 £960,500
1930 £807,500

Western Australian Year Book 1969, 489

APPENDIX 7A

TIMBER PRODUCTS EXPORTED FROM TASMANIA, 1854 - 1929/30[1]

DECENNIAL VALUES

YEARS	SAWN £	BOARD AND PLANKS £	BLACKWOOD SAWN £	PALINGS £	LATHS, SHINGLES £	STAVES AND TRENAILS £	BATTENS £	POSTS AND RAILS £	PILES AND BEAMS £	HEWN £	LOGS £	LOGS BLACKWOOD £	LOGS PINE £	LOGS OTHER £	PIECES £	TOTAL £
1854,57-59	316,122	12,298	n.a.	197,344	44,747	1,062	3,035	39,304	13,739	--	--	--	--	--	2,782	630,433
1860-69	237,134	--	--	269,549	39,345	13,547	7,615	10,320	6,943	2,985	2,339	3,727	10	71	40	593,585
1870-79	267,911	56	--	260,027	40,787	24,294	488	11,499	1,725	--	8,272	10,693	555	4	4,685	631,216
1880-89	267,406	--	33,594	119,690	10,063	15,099	12	8,460	508	--	12,693	22,949	3,998	714	8,889	504,345
1890-99	160,625	--	56,327	35,702	1,117	30,429	--	1,902	--	--	50	12,352	4,075	2,344	9,334	314,257
1900-1903	70,455	~~Pickets~~ 961	21,013	17,237	10	2,002	--	418	5,435	--	--	3,697	2,760	429	2,889[2]	861,219
1900-1909	738,346		n.a.	59,238	n.a.	5,900	n.a.	n.a.	n.a.	n.a.	11,023	n.a.	n.a.	n.a.	~~Other~~ 9,077	
1910-1921/22																n.a.
1922/23-1929/30	U: 2,314,942	--	504,604			STAVES									OTHER	
	D: 401,813	--	16,824													
	T 2,716,755	--	521,427	299.064	n.a.	58,214	n.a.	n.a.	n.a.	n.a.	27,823	70,321	9,779	9,057	3,045	3,714,736

STATISTICS OF TASMANIA

1 The years 1855-56 and 1910-1921/22 are omitted due to lack of data.

2 Classification change - laths, shingles, posts and rails, piles and beams, shaped pieces and miscellaneous items are grouped under Other.

D Dressed

U Undressed

APPENDIX 7B

TIMBER PRODUCTS EXPORTED FROM TASMANIA, 1854 - 1929/30[1]

YEAR	SAWN TIMBER			SPLIT TIMBER						LOGS AND LITTLE MODIFIED TIMBER							PIT (SHA (NE
	SAWN	BOARD and PLANKS	TOTAL	PALINGS	LATHS, SHINGLES	STAVES and TREENAILS	BATTENS	POST and RAILS	TOTAL	PILES and BEAMS	HEWN	LOGS GENERAL	LOGS BLACKWOOD	LOGS PINE	OTHER LOGS	TOTAL	
	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	
1854	153,425	8,456	161,881	88,027	23,966	1,012		22,005	135,010	8,896						8,896	
...																	
1857	61,736	2,942	64,678	47,344	11,209	50	885	5,614	65,102	2,753						2,753	1,2
58	61,205	900	62,105	31,115	5,974		1,045	8,207	46,311	1,025						1,025	(
59	39,756		39,756	30,838	3,640		1,105	3,478	39,069	1,065						1,065	1,0
1860	39,560		39,560	25,307	2,652	10	845	3,062	31,966	2,200						2,200	
61	28,708		28,708	23,130	2,615	40	1,165	1,049	28,005	627	510					1,137	
62	28,918		28,918	29,611	4,676		1,890	845	37,012	826						826	
63	31,326		31,326	29,386	4,536	580	975	592	36,069	30	2,420					2,450	
64	35,070		35,070	29,858	8,150	1,920	1,165	1,215	42,308	1,860			1,946	10	71	3,887	
65	18,481		18,481	27,289	4,975	315	3,428	915	36,922	1,220	55					1,275	
66	16,099		16,099	22,926	4,886	560	290	780	29,442			190				190	
67	13,592		13,592	33,942	1,945	1,180	75	877	38,019			136				136	
68	13,886		13,886	26,790	2,626	3,317	280	530	33,543	180			1,781			1,961	
69	13,494		13,494	21,214	2,294	3,052	85	455	27,090			2,013				2,013	
1870	15,920		15,920	15,381	1,781	2,618	110	466	20,351			991				991	
71	19,842	56	19,898	21,532	2,540	4,273	15	345	29,765			597				597	
72	14,360		14,360	24,007	1,810	4,520	300	592	31,029	60		1,165				1,225	
73	21,421		21,421	32,358	5,177	1,920		592	40,057	225			1,543			1,768	
74	32,696		32,696	30,663	8,227	2,397	25	1,983	41,295	1,027		254				1,431	
75	40,325		40,325	33,351	7,073	3,093		2,132	45,649	364		1,492				1,856	
76	23,118		23,118	30,851	4,825	* 1,518		1,172	38,366	49		2,046				2,095	1,2
77	33,330		33,330	29,253	4,368	1,243		973	35,837				3,164			3,164	
78	33,356		33,356	28,206	5,448	1,223		1,656	34,533				3,823	95	4	3,922	1,2
79	33,543		33,543	16,355	1,538	1,489	38	1,788	21,208			1,727	2,163	460		4,350	
		BLACKWOOD															
1880	24,431		24,431	17,536	2,432	1,136	12	1,030	22,146	24			3,888	525		4,437	
81	29,678		29,678	18,272	2,662	1,498		1,200	23,432			2,241				2,241	1,2
82	28,481		28,481	14,717	2,252	1,836		1,217	20,022			3,376	174	25		3,575	
83	19,801	5,226	25,027	13,513	912	1,858		766	17,049				2,515			2,515	
84	24,779		24,779	15,782	817	2,016		630	17,245			7,076				7,076	
85	21,888	1,049	22,937	11,808	620	1,463		1,020	14,911				4,809		123	4,932	1,2
86	18,052	2,134	20,186	9,736	295	870		742	11,643	400			2,467	14	38	2,881	
87	20,968	2,895	23,863	6,231	95	1,923		125	8,374				2,335	233	130	2,568	
88	44,565	9,273	53,838	7,244	5	1,374		1,036	9,659				2,249	2,206	210	4,665	1,0
89	34,763	12,997	47,760	6,851	173	1,125		694	8,843	84			4,512	995	233	5,591	
1890	16,049	10,553	26,602	4,228	223	2,080		387	6,918				3,282	335	244	3,861	
91	18,590	12,514	31,104	5,132	19	2,187		162	7,500				2,431	994	271	3,696	
92	11,972	11,540	23,512	3,300	730	1,889		338	6,266				2,030	308	216	2,554	
93	7,824	1,306	9,130	2,928	56	3,547		107	6,639				459	227	100	786	
94	9,538	1,120	10,658	2,157	4	4,541		161	6,863				260	547	155	962	
95	17,960	2,182	20,142	3,774	28	5,207		180	9,189				439	62	74	575	1,1
96	18,029	3,674	21,703	3,152	12	3,328		139	6,631				704	253	325	1,282	2,0
97	21,215	4,108	25,323	3,016	5	3,480		218	6,719			50	664	458	114	1,286	
98	13,895	4,263	18,158	3,585	25	2,929		85	6,624				996	393	150	1,539	
99	25,453	5,067	30,520	4,430	6	1,241		125	5,802				1,047	499	695	2,281	
1900	21,911	7,033	28,944	5,655	8	803		190	6,656				2,048	1,131	124	3,300	1,1
01	25,152	6,692	31,844	4,214		711		168	5,093	5,435		7	1,020	968	121	7,551	1,1
02	23,392	7,288	30,680	4,141	2	148		60	4,351			7	632	661	44	1,300	
						STAVES											01
	UNDRESSED UNDER 12x16	PICKETS (DRESSED)															
**1903	33,757	362	34,099	3,317	n.a.	340		n.a.	3,657	n.a.		719					4,
04	69,322	242	69,564	6,276		268			6,544			1,737					
05	79,431	16	79,447	7,659		674			8,333			1,476					1,
06	84,817	73	84,830	5,559		429			5,988			1,791					
07	108,250		108,250	5,482		726			6,208			5,300					1,
08	154,966	206	155,112	7,943		423			8,366								
09	137,428	62	137,490	8,992		1,378			10,370								
...																	
	UNDRESSED	DRESSED															
**1922/23	350,832	61,729		38,602[4]		4,509[4]						7,965					
23/24	413,062	88,082		70,344		7,876						18,596					
24/25	366,463	67,396		47,415		12,708						46,389					
25/26	404,205	66,949		33,700		11,184						29,266					
26/27	382,552	52,132		46,743		8,429						6,649					
27/28	283,183	32,742		25,729		5,414						3,596					
28/29	294,966	22,101		18,158		3,852						3,012					
29/30	254,491	26,907		16,473		4,233						1,511					

1 The years 1855-56 and 1910-1921/22 are excluded.

** Classification change.

2 Other includes laths, shingles, posts and rails, piles and beams, shaped pieces and miscellaneous items.

3 In 1929 dressed timber valued at £ 6,521 appears under Building Materials but was excluded from the Timber data.

4 By 1922/23 probably all paling exported was sawn, however it is likely that splitting remained the major technique for producing staves.

APPENDIX 7C TASMANIAN TIMBER EXPORTS BY TYPE AND PORT OF EXIT

1922/23 to 1929/30

Port of Exit	Dressed Timber £	Sawn Timber £	Palings £	Staves £	Logs £	Total £
Burnie	37,678	302,624	31,514	6,214	28,026	406,056
Devonport	8,403	87,984	16,190	635	5,583	118,795
Smithton	10,053	466,788	2,549	19,670	4,151	503,211
Stanley	5,142	298,276	2,246	22,143	25,854	353,661
Ulverstone	1,148	15,265	34,323	6,769	19,314	76,819
N.W. Coast	62,424	1,170,937	86,822	55,431	82,928	1,458,542
Hobart	120,748	1,120,238	193,277	2,427	21,686	1,458,376
King Island	40	939	-	294	422	1,695
Launceston	235,330	520,409	18,941	355	10,744	785,779
Strahan	95	7,083	24	-	1,196	8,398
TOTAL	418,637	2,819,606	299,064	58,507	116,976	3,713,190

As Percentage of State Exports

	%	%	%	%	%	%
Burnie	9.00	10.73	10.54	10.62	23.96	10.94
Devonport	2.01	3.12	5.41	1.09	4.77	3.20
Smithton	2.40	16.56	0.85	33.62	3.55	13.55
Stanley	1.23	10.58	0.75	37.85	22.10	9.52
Ulverstone	0.27	0.54	11.48	11.57	16.51	2.07
N.W. Coast	14.91	41.53	29.03	94.75	70.89	39.28
Hobart	28.84	39.73	64.63	4.15	18.54	39.28
King Island	0.01	0.03	-	0.50	0.36	0.05
Launceston	56.21	18.46	6.33	0.60	9.18	21.16
Strahan	0.02	0.25	0.01	-	1.02	0.23
TOTAL	99.99	100.00	100.00	100.00	99.99	100.00

As Percentage of Port Exports

	%	%	%	%	%	%
Burnie	9.28	74.53	7.76	1.53	6.90	100.00
Devonport	7.07	74.06	13.63	0.53	4.70	99.99
Smithton	2.00	92.76	0.51	3.91	0.82	100.00
Stanley	1.45	84.34	0.64	6.26	7.31	100.00
Ulverstone	1.49	19.87	44.68	8.81	25.14	99.99
N.W. Coast	4.28	80.28	5.95	3.80	5.69	100.00
Hobart	8.28	76.81	13.25	0.17	1.49	100.00
King Island	2.36	55.40	-	17.35	24.90	100.01
Launceston	29.95	66.23	2.41	0.05	1.37	100.01
Strahan	1.13	84.34	0.29	-	14.24	100.00
TOTAL	11.28	75.94	8.05	1.58	3.15	100.00

APPENDIX 8A. TASMANIAN EXPORTS OF BATTENS, 1857 - 1880.

SUMMARY

YEARS	SHARE OF TOTAL STATE TIMBER EXPORTS %	QUANTITY FEET	TOTAL VALUE £	TOTAL VALUE %	DESTINATION: AUSTRALIAN STATES N.S.W. £	N.S.W. %	Q. £	Q. %	S.A. £	S.A. %	VIC. £	VIC. %	W.A.	TOTAL £	TOTAL %	OVERSEAS N.Z. £	N.Z. %	OTHER £	OTHER %	TOTAL £	TOTAL %
1857-59	0.93	303,400	3,035	100.00	2,035	67.05	--		255	8.40	660	21.75	--	2,950	97.20	35	1.15	50	1.65	85	2.80
1860-69	1.28	2,437,350	7,615	100.00	3,875	50.89	140	1.84	1,405	18.45	610	8.01	--	6,030	79.19	1,530	20.09	55	0.72	1,585	20.81
1870-79	0.08	124,540 Number 75,000	488	100.00	103	21.11	--		160	32.79	25	5.12	--	288	59.02	200	40.98	--		200	40.98
1880	0.02	851	12	100.00	--		--		--		12	100.00	--	12	100.00	--		--		--	--
TOTAL 1857-1880 £	0.70		11,150		6,013		140		1,820		1,307		--	9,280		1,765		105		1,870	
%				100.00		53.93		1.26		16.32		11.72			83.23		15.83		0.94		16.77

APPENDIX 8B BATTENS EXPORTED FROM TASMANIA, 1857 - 1880.

QUANTITY, VALUE AND DESTINATION

YEAR	AUSTRALIAN STATES N.S.W. ft.	N.S.W. £	Q. ft.	Q. £	S.A. ft.	S.A. £	VIC. ft.	VIC. £	TOTAL '000 ft.	TOTAL £	OVERSEAS N.Z. ft.	N.Z. £	OTHER £	STATE TOTAL ft.	STATE TOTAL £
1857	134,800	630		--	17,900	95	55,000	260	208	885		--	--	208,700	885
58	272,100	550		--	8,000	25	17,000	40	297	1,045		--	--	297,000	1,045
59	192,000	525		--	51,000	135	12,700	360	356	1,020		35	50(M)	397,700	1,105
1860	183,000	520	5,000	10	52,000	145	55,000	125	295	800	2,500	5	40(N.C.)	307,000	845
61	208,000	480		--	81,000	240	99,000	220	445	1,150	7,000	15	--	452,000	1,165
62	277,735	800		--	126,400	540	31,900	170	376	1,510	239,650	370	--	616,703	1,880
63	119,512	350	12,000	45	13,600	35	2,000	10	167	640	92,980	335	--	260,092	975
64	114,520	310	37,000	25	21,000	75		--	173	605	148,875	560	--	286,195	1,165
65*	155,170	485	20,835	60	63,670	205	15,000	45	255	795	20,000	60	--	274,505	855
66	59,310	165	2,000	5		--	10,000	40	71	205	26,000	80	--	97,350	290
67	5,577	20		--	9,850	30		--	16	50	7,000	25	--	22,427	75
68	51,442	120		--	31,800	110		--	83	230	10,000.	35	15(G.)	98,242	280
69	5,000	15		--	8,000	25		--	13	40	12,430	45	--	25,430	85
1870	24,350	75		--	3,500	10	7,185	25	35	110		--	--	35,035	110
71	5,000	15		--	--	--		--	5	15		--	--	5,000	15
72	--	--		--	40,000	150		--	40	150	43,000	150	--	83,000	300
73		--		--		--		--		--		--	--		--
74		--		--		--		--		--	1,500	25	--	1,500	25
75		--		--		--		--		--		--	--		--
76		--		--		--		--		--		--	--		--
77		--		--		--		--		--		--	--		--
78		--		--		--		--		--		--	--		--
	Number						Number		Number		Number			Number	
** 79	2,500	13		--		--		--	2,500	13	5,000	25	--	75,000	38
1880		--		--		--	851	12	851	12		--	--	851	12

* Battens appear only in statistics compiled by Hobart customs officers except for the Launceston exports of 1865 when battens are mentioned in combination with staves. Since these battens are not itemized, they have been included under staves. Batten exports are therefore understated and Launceston totally unrepresented though to what extent is unknown. However it is assumed that the trend of any batten exports from Launceston would parallel that of the Hobart exports.

** Change of units.

G. Guam
M. Mauritius
N.C. New Caledonia

APPENDIX 9

TASMANIAN EXPORTS OF BLACKWOOD, 1864 - 1929/30.

SUMMARY

YEARS	PRODUCT	SHARE OF TOTAL STATE TIMBER EXPORTS %	QUANTITY FEET	VALUE £	VALUE %	DESTINATION																	
						AUSTRALIAN STATES												OVERSEAS					
						N.S.W.		Q.		S.A.		VIC.		W.A.		TOTAL		N.Z.		U.K.		TOTAL	
						£	%	£	%	£	%	£	%	£	%	£	%	£	%	£	%	£	%
1864,1868		2.65	1,048,806	3,727	100.00	--		--		168	4.51	3,559	95.49	--		3,727	100.00	--		--		--	
1873 1877-79		3.98	3,283,278	10,693	100.00	34	0.32	--		1,244	11.63	9,291	86.89	--		10,569	98.84	92	0.86	32	0.30	124	1.16
1880-89	Logs	4.55	6,388,844	22,949	40.59	2,130		69		2,269		18,350	32.45	--		22,818	40.36	131		--		131	
	Sawn	6.66	4,466,722	33,594	59.41	722		--		2,002		30,787	54.45	--		33,511	59.27	36		47		83	
	Total	11.21	10,855,566	56,543	100.00	2,852	5.04	69	0.12	4,271	7.55	49,137	86.90	--		56,329	99.62	167	0.30	47	0.08	214	0.38
1890-99	Logs	3.93	659,223	12,352	17.99	3,071	4.47	89		2,756	4.01	5,405	7.87	--		11,321	16.48	1,013		18		1,031	
	Sawn	17.92	1,604,207	56,327	82.01	17,308	25.20	20		5,546	8.08	29,885	43.51	40		52,799	76.88	387		3,141		3,528	
	Total	21.85	2,263,430	68,679	100.00	20,379	29.67	109	0.16	8,302	12.09	35,290	51.38	40	0.06	64,120	93.36	1,400	2.04	3,159	4.60	4,559	6.64
1900-02	Logs	3.01	755,850	3,697	14.96	379	1.53	--		903	3.65	2,085	8.43	--		3,367	13.62	90	0.36	240	0.97	330	1.34
	Sawn	17.11	3,419,142	21,013	85.04	5,703	23.08	--		1,868	7.56	12,524	50.68	--		20,095	81.32	298	1.21	620	2.51	918	3.72
	Total	20.12	4,174,992	24,710	100.00	6,082	24.61	--		2,771	11.21	14,609	59.12	--		23,462	94.95	388	1.57	860	3.48	1,248	5.05
1903-1921/22			n.a.	n.a.																			
1922/23 to 1929/30	Logs	1.89	7,400,000	70,321	11.89											70,321						--	
	Undressed	13.58	27,958,000	504,604	85.27											504,534						70	
	Dressed	0.45	675,000	16,823	2.84											16,823						--	
	Total	15.93	36,033,000	591,748	100.00											591,678	99.99					70	0.01
TOTAL 1864-1902	Logs			53,418	32.50	5,614	3.42	158		7,340	4.47	38,690	23.54	--		51,802	31.52	1,326	0.81	290	0.17	1,616	0.98
	Sawn			110,934	67.50	23,733	14.44	20		9,416	5.73	73,196	44.54	40		106,405	64.74	721	0.44	3,808	2.32	4,529	2.75
	Total			164,352	100.00	29,347	17.86	178	0.11	16,756	10.20	111,886	68.08	40	--	158,207	96.26	2,047	1.25	4,098	2.49	6,145	3.74

APPENDIX 10

TASMANIAN EXPORTS OF LATHS AND SHINGLES, 1849 - 1902.

SUMMARY

AR		SHARE OF TOTAL STATE TIMBER EXPORTS %	QUANTITY NUMBER in 1000's	VALUE £	VALUE %	AUSTRALIAN STATES N.S.W. £	N.S.W. %	Q. £	Q. %	S.A. £	S.A. %	VIC. £	VIC. %	W.A. £	W.A. %	TOTAL £	TOTAL %	OVERSEAS N.Z. £	N.Z. %	OTHERS £	OTHERS %	TOTAL £	TOTAL %
	S		11,292	n.a.																			
69	H		13,499	23,966	53.56	7,040		--		2,343		8,322		--		n.a. 17,705	39.57	2,233		50		n.e. 2,283	
	L		31,038	19,988	44.67	15		--		54		714		--		783	1.75	10		--		10	
	S		767	793	1.77																		
	*	7.10	45,304*	44,747*	100.00	7,055	15.77	--		2,397	5.36	9,036	20.19	--		18,488	41.32	2,243	5.01	50	0.11	2,293	5.1
9	H+		70,938	37,140+	94.40	6,975	17.72	975		2,365		2,270	5.77	--		12,585	31.99	19,475	49.50	555		20,030	50.9
	L		965	2,205	5.60	35		53		254		1,720	4.37	--		2,062	5.24	143		--		143	
	S	6.63	71,903	39,345	100.00	7,010	17.81	1,028	2.61	2,619	6.66	3,990	10.14	--		14,647	37.23	19,618	49.86	555	1.41	20,173	51.2
8	H		87,812	38,978	95.57	556	1.36	--		3,536	8.67	494	1.21	--		4,586	11.24	34,167	83.77	225		34,392	84.3
	L		333	271	0.66	--		--		83		151				234	0.57	37		--		37	
9	S	6.46	91,275	40,787	100.00	722	1.77	--		4,076	9.99	657	1.61	--		5,455	13.37	35,107	86.07	225	0.55	35,332	86.6
89	S	2.00	19,861	10,063	100.00	120	1.19	--		4,357	43.30	267	2.65	--		4,744	47.14	5,293	52.60	26	0.26	5,319	52.8
9	S	0.36	526	1,117	100.00	276	24.70	--		251	22.47	345	30.89	--		872	78.07	245	21.93	--		245	21.9
2		--	96	10		--		--		--		2		--		2		8		--		8	
LS																							
8	H		189,789	96,106+	70.63	14,571		975		8,244		11,086		--		34,876		55,875		830		56,705	
902	L		2,065	3,269	2.40	50		53		162		2,585		--		3,079		190				190	
	S	4.87	240,257	136,069	100.00 * +	15,183	11.16	1,028	0.76	13,700	10.07	14,297	10.51	--		44,208	32.49	62,514	45.94	856	0.63	63,370	46.5

STATISTICS OF TASMANIA.

H Hobart exports
L Launceston exports
S Total State exports

* 1854 Destination given only as "British Colonies."
Represents 17.61% of the total lath and shingle exports for the period 1854 - 1902.

APPENDIX 41

TASMANIAN EXPORTS OF LOGS[1] 1860 - 1929/30

SUMMARY

YEARS	PRODUCT AND PORT OF EXIT	SHARE OF STATE TIMBER EXPORTS %	QUANTITY 1000 Ft.	TOTAL VALUE £	TOTAL VALUE %	DESTINATION: AUSTRALIAN STATES N.S.W. £	N.S.W. %	Q. £	Q. %	S.A. £	S.A. %	VIC. £	VIC. %	W.A. £	W.A. %	TOTAL £	TOTAL %	OVERSEAS TOTAL £	OVERSEAS TOTAL %
1860-69	(L) H		772	2,985	56.07	5		—		—		2,980	55.97	—		2,985		—	
	(L) L,P.		656	2,339	43.93	—		—		314		2,025	38.04	—		2,339		—	
	TOTAL	0.90	1,428	5,324	100.00	5	0.09	—		314	5.90	5,005	94.01	—		5,324	100.00	—	
1870-78	(L) L.P.		2,489	6,545		120		—		770		5,655		—		6,545		—	
	(L) S.			4		—		—		—		4		—		4		—	
1870-79	TOTAL	1.30	2,489	8,276	100.00	125	1.51	—		1,299	15.70	6,852	82.79	—		8,276	100.00	—	
1880-89	L[2]		(5,331)*	12,693	72.93	586		—		2,517		9,492		—		12,595	72.36	98	
	M		53	232	1.33	6		—		—		226		—		232	1.33	—	
	P		387	3,998	22.96	804		10		512		2,642		—		3,958	22.80	30	
	S		147	482	2.77	—		—		—		482		—		482	2.77	—	
	TOTAL	3.34	587	17,405	99.99	1,396	8.02	10	0.06	3,029	17.40	12,842	73.78	—		17,277	99.26	128	0.74
1890-99	C		20	50	0.77	—		—		—		50		—		50	0.77	—	
	M		385	1,280	19.78	29		3		42		606		—		680	10.51	600	
	P		856	4,076	63.00	499		80		2,750	42.50	684		—		4,013	62.02	63	
	S		341	1,064	16.45	16		—		161		872		—		1,049	16.21	15	
	TOTAL	2.06	1,602	6,470	100.00	544	8.41	83	1.28	2,953	45.64	2,212	34.11	—		5,792	89.52	678	10.48
1900-02	M		43	161	5.05	46	1.44	—		—		107	3.36	—		153	4.80	8	
	P		544	2,760	86.55	275	8.62	—		2,092	65.66	391	12.26	—		2,758	86.48	2	
	S		84	268	8.40	20	0.63	—		2		246	7.71	—		268	8.40	—	
	TOTAL	2.80	671	3,189	100.00	341	10.69	—		2,094	65.66	744	23.33	—		3,179	99.69	10	0.31
1900-09	TOTAL	1.65		14,212	100.00	n.a.		n.a.		n.a.		n.a.		n.a.		8,625	60.69	5,587	39.31
1922/23-1929/30	G		2,957	27,823	59.63											25,938		1,885	
	M		661	4,885	10.47											4,885		—	
	P		912	9,779	20.96											9,779		—	
	S		532	4,046	8.67											4,046		—	
	O		19	126	0.27											59		67	
	TOTAL		5,084	46,659	100.00											44,707	95.82	1,952	4.18
1870-1902	TOTAL			40,664	100.00	2,411	5.93	93	0.23	9,689	23.83	27,655	68.01	—		39,848	97.99	816	2.01
1870-1929/30	TOTAL			98,346	100.00											90,001	91.51	8,345	8.49

STATISTICS OF TASMANIA.

(L) Launceston, Port of Exit.
H Hewn
L Logs
P Piles

Type of Timber
G "Gum" (Hardwood)
M Myrtle
P Pine
S Sassafras

1 Blackwood omitted: see Appendix 9
2 May include Blackwood
* Unit is number not feet. This quantity is omitted from the decennial total.

APPENDIX 12

TASMANIAN EXPORTS OF PALINGS, 1849 - 1929/30

SUMMARY

ARS		SHARE OF STATE TIMBER EXPORTS %	QUANTITY in 1000's	VALUE £	VALUE %	DESTINATION: AUSTRALIAN STATES N.S.W. £	N.S.W. %	Q. £	Q. %	S.A. £	S.A. %	VIC. £	VIC. %	W.A. £	W.A. %	TOTAL £	TOTAL %	OVERSEAS N.Z. £	N.Z. %	PACIFIC £	PACIFIC %	OTHER £	OTHER %	TOTA £
			3,142	n.a.																				
	H	26.32	20,004	85,445	78.16	6,489	5.94	--		15,120	13.83	58,781	53.77	--		80,390	73.54	4,940		115		--		5,055
	L	7.35	3,136	23,872	21.84	1,178	1.08	--		780	0.71	21,891	20.03	--		23,849	21.82	23		--		--		23
	S	33.67	23,140	109,317	100.00	7,667	7.01	--		15,900	14.54	80,672	73.80	--		104,239	95.35	4,963	4.54	115	0.11	--		5,078
57-59	S	31.30	30,354	197,344[2]																				
	H	30.75	45,951	182,505	67.71	22,390	8.31	4,655	1.73	26,090	9.68	74,005	27.46	--		127,140		54,395	20.18	960	0.36	10	--	55,365
	L	14.66	17,877	87,044	32.29	1,413	0.52	805	0.30	31,358	11.63	50,268	18.65	--		83,844		3,200						3,200
	S	45.41	63,828	269,549	100.00	23,803	8.83	5,460	2.03	57,448	21.31	124,273	46.10	--		210,984	78.27	57,595	21.37	960	0.36	10	--	58,565
	H		37,356	171,055	65.78	26,414	10.84	3,827	1.57	34,213	14.04	46,972	19.28	--		111,326	45.69	57,617	23.65	1,845	0.76	67	0.03	59,529
	L		12,665	72,619	27.93	345	0.14	1,381	0.57	12,665	5.20	57,602	23.64	--		71,993	29.54	626	0.26	--		--		626
	S	41.91	56,919	260,028	100.00	29,071	11.18	5,646	3.22	51,308	18.68	109,725	42.20	--		195,750	75.28	62,367	23.98	1,845	0.71	67	0.03	64,279
	S	23.73	27,973	119,690	99.99	15,222	12.72	479	0.40	35,869	29.97	36,717	30.68	--		88,287	73.76	30,525	25.50	559	0.47	319	0.27	31,403
	S	11.36	9,434	35,702	100.00	1,651	4.62	69	0.19	20,973	58.74	1,709	4.79	28	0.08	24,430	68.43	11,272	31.57	--		--		11,272
	S	6.88	12,624	17,327 59,238	100.00 100.00	797	4.60	--		8,141	46.98	1,429	8.25	--		10,367 30,433	59.83 51.37	6,952	40.12	--		8	0.05	6,960 28,805
/22	S		n.a.	n.a.												n.a.								33,562
-1929/30	S	5.20	24,645	299,064	100.00											264,900	88.58							34,164
03				811,614	100.00	78,211	9.64	11,654	1.44	189,639	23.37	354,525	43.68	28	--	634,057	78.12	173,674	21.40	3,479	0.43	404	0.05	177,557
29/30[4]			225,777	1,240,616	100.00[2]											919,023	74.08							233,566

Palings (number) 5,220,641[3]

H Hobart
L Launceston
S State Total

n.a. not available

1 Pacific includes Fiji, Guam, New Caledonia and New Guinea.

2 1854 - destination "British Colonies."

APPENDIX 13

TASMANIAN EXPORTS OF SHAPED PIECES, 1849 - 1902.

SUMMARY

YEAR		SHARE OF TOTAL STATE TIMBER EXPORTS %	QUANTITY NUMBER	TOTAL VALUE £	%	DESTINATION																	
						AUSTRALIAN STATES												OVERSEAS					
						N.S.W.		Q.		S.A.		VIC.		W.A.		TOTAL		N.Z.		OTHER		TOTAL	
						£	%	£	%	£	%	£	%	£	%	£	%	£	%	£	%	£	%
1849			96,444	n.a.																			
1857-59	H	0.52	23,806	1,700		10		--		410		1,207		--		1,627		73		--		73	
	L	0.33	5,794	1,082		--		--		--		1,082		--		1,082		--		--		--	
	S	0.66	29,600	2,782	100.00	10	0.36	--		410	14.74	2,289	82.28	--		2,709	97.38	73	2.62	--		73	2.62
1860-69		--	--	--																			
1870-79	H	0.65	53,965	4,073		90		--		1,712		414		--		2,216		1,857		--		1,857	
	S	0.74	62,056	4,585	100.00	154	3.29	3	0.06	2,057	43.91	471	10.05	--		2,685	57.31	2,000	42.69	--		2,000	42.69
1880-89	S	1.76	91,031	8,889	100.00	177	1.99	114	1.28	2,071	23.30	3,375	37.97	--		5,737	64.54	3,110	35.00	42	0.46	3,152	35.46
1890-99	S	2.97	507,960	9,334	100.00	1,071	11.47	17	0.18	1,455	15.59	4,273	45.78	21	0.23	6,837	73.25	2,497	26.75	--		2,497	26.75
1900-02	S	2.35	63,017	2,889	100.00	396	13.71	9	0.31	32	1.11	1,795	62.13	29	1.00	2,261	78.26	621	21.50	7	0.24	628	21.74
TOTAL 1857-1903	S		753,664	28,579	100.00	1,808	6.33	143	0.50	6,025	21.08	12,203	42.70	50	0.17	20,229	70.78	8,301	29.05	49	0.17	8,350	29.22
1849-1903			(850,108)																				

APPENDIX 14

TASMANIAN EXPORTS OF PILES AND BEAMS, 1854 - 1902.

SUMMARY OF VALUE AND DESTINATION

YEAR	SHARE OF TOTAL STATE TIMBER EXPORTS	QUANTITY	TOTAL VALUE		DESTINATION															
					AUSTRALIAN STATES										OVERSEAS					
					N.S.W.		Q.		S.A.		VIC.		W.A.		TOTAL		N.Z.		OTHER		TOTAL	
	%	No.	£	%	£	%	£.	%	£	%	£	%	£	%	£	%	£	%	£	%	£	%
1854	2.91	n.a.	8,896												n.a.*						n.a.	
...	...		...												...						...	
1857-59	1.49	3,225(No.)	4,843	100.00	--		--		10	0.21	4,758	98.24	--		4,768	98.45	75	1.55	--		75	1.55
1860-69	1.17	4,122(No.) + 5,500 ft.	6,943	100.00	50	0.72	--		361	5.20	4,052	58.35	--		4,463	64.28	2,480	35.72	--		2,480	35.72
1870-79	0.27	438(No.) + 88,684 ft.	1,725	100.00	--		--		155	8.99	388	22.49	--		543	31.48	1,182	68.52	--		1,182	68.52
1880-89	0.10	78(No.) + 4,517 ft.	508	100.00	24	4.72	--		--		84	16.54	--		108	21.26	400	78.74	--		400	78.74
1890-99	0	--	--		--		--		--		--		--		--		--		--		--	
1900-02	4.43	627(No.) containing 775,789 sup. ft.	5,435	100.00	--		--		--		--		--		--		--		5,435	100.00	5,435	100.00
TOTAL 1854-1902	1.01				74		--		526		9,282		--		9,882		4,137		5,435		9,572	
£		8,490(No.) + 98,701 ft.	28,350																			
%				100.00*		0.26				1.86		32.74				34.86		14.59		19.17		33.76

STATISTICS OF TASMANIA.

* 1854 Destinations described as "British colonies"; not included in destination values.
1854 Value represents 31.38% of total export earnings from piles and beams.

\+ Two measurement system (feet and number) are used interchangeably. 1901 is the only year in which export quantities are expressed in both units.

EARS		VALUE			DESTINATION																
					AUSTRALIAN STATES											OVERSEAS					
		PERCENTAGE OF TASMANIAN TIMBER EXPORTS %	QUANTITY No.	TOTAL VALUE £	%	N.S.W. £	%	Q. £	%	S.A. £	%	VIC. £	%	W.A.	TOTAL £	%	N.Z. £	%	OTHER £	%	TOTAL £	
1*, 7-9	H		480,551	6,273		38			--	60		5,810		--			345				345	
	L		839,325	11,026		34			--	--		10,992		--			--				--	
	S	6.23	1,319,876	39,304*		72			--	80		16,802		--	16,954+		345				345	
0-89	H		521,330	6,930		980		20		260	2.52	1,280	12.40	--	2,540	24.61	4,365	42.30	25		4,390	
	L		257,613	3,390		14		3		13	0.13	3,338	32.34	--	3,368	32.64	22	0.21	--		22	
	S	1.74	779,143	10,320	100.00	994	9.63	23	0.22	273	2.65	4,618		--	5,908	57.25	4,387	42.51	25		4,412	42
0-79	H		588,863	8,615		--		--		250		448		--	698	6.07	7,835	68.14	82		7,917	68
	L		77,226	1,096		--		20		10		1,007		--	1,037	9.02	59				59	
**	S	1.82	794,221	11,499	100.00	40	0.35	20	0.17	505	4.39	1,885	16.39	--	2,450	21.31	8,967		82		9,049	78
0-89		1.68	653,729	8,460	100.00	180	2.13	--		426	5.04	3,106	36.71	--	3,712	43.88	4,741	56.04	7		4,748	56
0-99		0.61	170,529	1,902	100.00	67	3.52	--		193	10.15	314	16.51	--	574	30.18	1,328	69.82	--		1,328	69
0-02		0.34	30,417	418	100.00	--		--		--		--		--	--		418	100.00	--		418	100
TAL 4-1902	£		3,747,915	71,903	99.99*	1,353	1.88	43	0.06	1,477	2.05	26,725	37.17	--	29,598+	41.16	20,186	28.07	114	0.16	20,300	28
	%	2.57																				

* 1854 State Total only; destination given as "British Colonies"
The Value for 1854 represents 30.6% of the total export earnings from posts and rails, 1854 - 1902.
\+ 1854 Omitted from destination data.
** 1879 Ports of Exit data ceases.
H Hobart Port of Exit L Launceston Port of Exit S State Total

APPENDIX 15B

TASMANIAN EXPORTS OF POSTS AND RAILS, 1854 - 1902

QUANTITY, VALUE AND DESTINATION

YEAR	PORT OF EXIT	AUSTRALIAN STATES									OVERSEAS			TOTALS					
		N.S.W.		Q.		S.A.		VIC.		TOTAL	N.Z.		OTHER	HOBART		LAUNCESTON		STATE	
		No.	£	No.	£	No.	£	No.	£	£	No.	£	£	No.	£	No.	£	No.	£
1854																		518,877	22,005
...																			...
1857	H	2,200	38			2,641	80	139,034	2,555	2,673	22,500	80		166,375	2,753				
	H	1,700	34					126,785	2,827	2,861						128,485	2,861	294,860	5,614
1858								180,256	2,440	2,440	5,800	70		186,056	2,510				
								554,300	5,697	5,697						554,300	5,697	740,356	8,207
59								114,200	815	815	13,920	195		128,120	1,010				
								156,540	2,468	2,468						156,540	2,468	284,660	3,478
1860	H					5,500	160	55,500	710	710	10,200	150	10(N.C.)	72,000	1,030				
	H	570	14					146,297	2,018	2,032						146,867	2,032	218,867	3,062
61								22,000	270	270	5,000	60		27,000	330				
						300	3	57,025	716	719						57,325	719	84,325	1,049
62		15,000	250					5,008	70	320	13,850	175		33,858	495				
				300	3			34,000	347	350						34,300	350	68,158	845
63						1,000	10			10	26,560	320		27,560	330				
								15,325	242	242	2,000	20				17,325	262	44,885	592
64		740	20			200	5	50	10	35	73,916	1,175		74,906	1,210				
								546(P)	5	5						546	5	75,452	1,215
65		40	10	335	5			1,972	20	35	71,030	875		73,377	910				
								274	5	5						274	5	73,651	915
66		59,835	700	1,150	15	1,300	15	1,950	30	760			15(G.)	65,235	775				
								250	5	5						250	5	65,485	780
67						3,500	70	5,000	50	120	57,994	745		66,494	865				
						700	10			10	226	2				926	12	67,420	877
68								5,247	60	60	39,764	470		45,011	530				
																	0	45,011	530
69								6,613	60	60	29,276	395		35,889	455				
																	0	35,889	455
1870	H							23,000	115	115	25,700	340		48,700	455				
								500	5	5	500	6				1,000	11	49,700	466
71								1,000	10	10	23,175	315		24,175	325				
				1,000	20					20						1,000	20	25,175	345
72								5,000	55	55	19,650	230	80(G.)	31,150	365				
								1,500	17	17	700	10				2,200	27	33,350	392
73								3,700	45	45	37,341	510		41,041	555				
								400	4	4	1,850	33				2,250	37	43,291	592
74								1,000	15	15	111,350	1,847		112,350	1,862				
								5,450	121	121						5,450	121	117,800	1,983
75	H					2,850	44	200	30	74	118,484	2,038		123,334	2,112				
								1,800	20	20						1,800	20	125,134	2,132

1876							3,250	48	48	56,260	792	2(G.)	59,710	842				
77					1,000	12	22,756	330	330						22,756	330	82,466	1,172
78							6,950	103	115	40,804	567		48,754	682				
					14,500	194	20,187	291	291						20,187	291	68,941	973
					1,000	10	2,000	27	221	83,149	1,196		99,649	1,417				
79		3,000	40		16,740	245	17,283	219	229	2,300	10				20,583	239	120,232	1,656
							38,010	430	715	70,382	1,073						128,132	1,788
1880					5,981	54	24,830	261	315	51,650	715						82,461	1,030
		600	8		2,225	28	13,440	154	190	69,468	1,003	7(F.)					86,333	1,200
82							32,550	162	162	132,430	1,055						164,980	1,217
83					1,880	24	4,900	59	83	43,800	683						50,580	766
					1,775	28	16,300	238	266	26,555	364						44,630	630
		5,500	82		950	52	37,901	528	662	26,150	358						70,501	1,020
					2,000	30	20,390	311	341	27,155	401						49,545	742
					6,000	55	1,600	20	75	4,500	50						12,100	125
							50,759	987	987	4,400	49						55,159	1,035
		4,500	90		7,700	155	19,940	386	631	5,300	63						37,440	694
1890		3,000	17				12,275	217	234	10,400	153						25,675	397
							8,300	41	41	7,600	121						15,900	162
					33,800	158	2,000	11	169	12,870	169						48,670	338
		2,500	25				900	9	34	7,790	73						11,190	107
							425	2	2	12,500	159						12,925	161
					1,095	11			11	14,088	169						15,183	180
					8,000	24			24	9,800	115						17,800	139
		1,600	25				1,200	15	40	11,673	178						14,473	218
							1,500	17	17	6,200	68						7,700	85
							35	2	2	10,100	123						10,135	125
1900									--	11,862	190						11,862	190
01									--	11,050	168						11,050	168
02									--	7,505	60						7,505	60

STATISTICS OF TASMANIA.

H. Hobart P. Posts F. Fiji

APPENDIX 16.

TASMANIAN EXPORTS OF SAWN TIMBER[1] 1849 - 1929/30

SUMMARY

YEARS		SHARE OF STATE TIMBER EXPORTS %	QUANTITY in 1000 ft.[2]	VALUE £	VALUE %	DESTINATION																	
						AUSTRALIAN STATES												OVERSEAS					
						N.S.W.		Q.		S.A.		VIC.		W.A.		TOTAL		N.Z.		PACIFIC		OTHERS	
						£	%	£	%	£	%	£	%	£	%	£	%	£	%	£	%	£	%
1849			5,950	n.a.																			
1857-59	H		25,836	112,430	69.10	14,775	9.08	--		5,885	3.62	85,387	52.48	--		106,047	65.18	6,023	3.70	110	0.07	250	0.15
	L		4,114	50,267	30.90	701	0.43	--		--		49,566	30.47	--		50,267	30.90	--		--			
1854,	S	50.12	29,950	162,697	100.00	15,476	9.51	--		5,885	3.62	134,953	82.95	--		156,314	96.08	6,023	3.70	110	0.07	250	0.15
57-59	S	50.14	47,598	316,122[3]																			
1860-69	H		38,985	150,215	63.35	10,439	4.40	1,785	0.75	24,355	10.27	42,705	18.01	--		79,200	33.43	69,630	29.40	270	0.11	1,085	
	L		19,592	86,919	36.65	7,304	3.08	675	0.28	26,543	11.19	48,501	20.45	--		83,023	35.00	3,846	1.62	--		--	
	S	39.95	58,577	237,134	100.00	17,739	7.50	2,460	1.00	50,898	21.50	91,206	38.50	--		162,303	68.40	73,476	30.99	270	0.11	1,085	0.46
1870-78	H		47,026	173,634	74.09	1,725	0.74	295	0.13	63,259	26.99	27,804	11.86	--		93,083	39.72	76,190	32.51	3,716	1.59	645	0.28
	L		17,533	60,734	25.91	353	0.15	255	0.11	24,999	10.67	33,856	14.45	--		59,463	25.37	1,271	0.54				
	S			234,368		2,078	0.89	550	0.23	88,258	37.66	61,660	26.31			152,546	65.90	77,461	33.05	3,716	1.59	645	0.28
1870-79	S	42.44	73,833	267,911	100.00	2,191	0.80	550	0.21	99,841	37.27	65,961	24.62			168,513	62.90	94,837	35.40	3,916	1.46	645	0.24
1880-89	B	6.66	45	33,594	11.15	722	0.24	--		2,002	0.67	30,787	10.23	--		33,511	11.13	35	--	--		47	
	O	53.02	96,491	267,406	88.84	8,566	2.85	616	0.20	82,486	27.40	118,969	39.52	--		210,637	69.98	53,004	17.61	3,735	1.24	31	
	T	59.68	96,536	301,000	100.00	9,288	3.09	616	0.20	84,488	28.07	149,756	49.75	--		244,148	81.11	53,039	17.61	3,735	1.24	78	0.03
1890-99	B	2.26	7,100	56,327	26.00	17,308	7.98	20	0.01	5,546	2.56	29,885	13.80	40	--	52,799	24.30	387	0.18	--		3,141	1.45
	O	51.11	57,138	160,525	74.00	6,581	3.03	8,973	4.14	58,578	27.00	14,078	6.50	1,383	0.60	89,593	41.30	40,619	18.72	1,260	0.58	29,153	13.44
	T	69.04	64,238	216,952	100.00	23,889	11.10	8,993	4.15	64,124	29.56	43,963	20.30	1,423	0.60	142,392	65.60	41,006	18.90	1,260	0.58	32,294	14.89
1900-02	B		3,419	21,013	16.78	5,703	4.55	--		1,868	1.49	12,524	10.00	--		20,095		298	0.24			620	0.50
	O		25,449	70,455	56.27	11,234	8.97	383		14,617	11.67	11,311	9.03	322		37,867		21,066	17.32	520		10,382	8.29
1900-03	S*	75.59	36,547	125,205	100.00	18,727	14.96	383	0.31	21,805	17.42	31,342	25.03	519	0.41	72,776	58.13	31,144	24.87	520	0.42	20,765	16.58
1900-09	T	88.17	138,830	759,359	100.00											379,697	50.00						
1910-1921/22			n.a.	n.a.												n.a.							
1922/23-1929/30	B	13.58	27,958	504,604	17.90											504,534							
	H	58.00	164,177	2,157,794	76.53											1,949,805							
	O	4.23	8,453	157,148	5.57											156,733							
	T	75.90	200,588	2,819,546	100.00											2,611,072	92.61						
TOTAL 1857-1903			399,681[2]	1,310,899		87,270	6.66	13,012	0.99	327,041	24.95	517,181	39.45	1,962	0.15	946,466	72.20	299,525	22.85	9,811	0.75	55,117	4.20
1854-1929/30[4]			680,260[2]	4,910,024	100.00[5]											5,864,439	78.50						

1 Timber described as 'dressed' is omitted.

2 Quantity - unit prior to 1900 given as "feet", but from then onward as "superficial feet."

3 1854 - destination "British colonies"
- represents 3.1% of total sawn exports.

4 1855-6 and 1910-1921/22 omitted from totals.

* Classification change in 1903, 'Sawn' becomes 'undressed.'

\+ 1914 not available.

H Hobart
L Launceston
S State Total
n.a. not available

B Blackwood
H Hardwoods - included in O until 1922/23
O Other timbers
T Total

APPENDIX 17.

TASMANIAN EXPORTS OF STAVES AND TRENAILS, 1849 - 1929/30

SUMMARY

YEARS	PORT OF EXIT and PRODUCT	SHARE OF STATE TIMBER EXPORTS %	QUANTITY in 1000's	VALUE £	VALUE %	DESTINATION: AUSTRALIAN STATES N.S.W. £	N.S.W. %	Q. £	Q. %	S.A. £	S.A. %	VIC. £	VIC. %	W.A. £	W.A. %	TOTAL £	TOTAL %	OVERSEAS N.Z. £	N.Z. %	U.K. £	U.K. %	OTHER £	OTHER %	TOTAL £	TOTAL %
49			376	n.a.																					
57-59	H (T)		2	50								50				50								—	
54, 857-59	S (T,S)	0.17	61	1,062[1]												n.a.								n.a.	
60-69	H		1,586	9,600	70.86	2,835		250		830		4,690	34.62			8,605	63.52	315		645		35		995	7.34
	L (S,S)		1,227	3,947	29.14	10		--		31		3,594	26.53			3,635	26.83	312		--		--		312	2.30
	S	2.28	2,813	13,547	100.00	2,845	21.00	250	1.85	861	6.36	8,284	61.15	--		12,240	90.35	627	4.63	645	4.76	35	0.26	1,307	9.65
70-78	H		1,459	8,794	36.20	2,027		106		1,355		2,421		--		5,909		313		2,532		40		2,885	
	L (S)		3,548	14,011	57.68	1,084		482		981		11,394				13,941		60		10		--		70	
	S	3.85	5,323	24,294	100.00	3,736	15.38	588	2.42	2,773	11.41	14,047	57.82	--		21,144	87.03	373	1.54	2,737	11.27	40	0.16	3,150	12.97
80-89		2.99	3,841	15,099	100.00	6,681	44.25	517	3.42	3,430	22.72	3,720	24.64	--		14,348	95.03	154	1.02	597	3.95	--		751	4.97
90-99		9.68	6,938	30,429	100.00	20,556	67.56	4,586	15.07	2,755	9.05	1,983	6.52	--		29,880	98.20	529	1.74	20		--		549	1.80
00-03			494	2,002		436		330		645		575		--		1,986		16		—		--		16	
00-09		0.69	1,223+	5,900	100.00											5,878	99.63							22	0.37
...																									
22/23-1929/30		1.57	2,440	58,214	100.00											57,172	98.21							1,042	1.79
ATE TOTALS 87-1903			19,470	85,420		34,254	39.63	6,271	7.26	10,464	12.11	28,659	33.16			79,647	92.15	1,699	1.97	3,999	4.63	75	0.09	5,773	6.68
54-1929/30			22,639	148,594	99.99[1]											140,711	94.69							6,821	4.59

H Hobart
L Launceston
S Staves
T Trenails

APPENDIX 18

TASMANIAN EXPORTS OF BARK, 1848 - 1929

SUMMARY

YEARS	PORTS OF EXIT	QUANTITY	VALUE		DESTINATION										
					AUSTRALIAN STATES						OVERSEAS				
					N.S.W.	Q.	S.A.	VIC.	W.A.	TOTAL	MAURITIUS	N.Z.	U.K.	OTHER	TOTAL
		TON	£	%	£	£	£	£	£	£	£	£	£	£	£
1848-49			2,771*										1,147	150 (U.S.A.)	1,297
1857-59	H	340	2.017	20.97	93	--	--	--	--	93	175		1,749		1,924
	L	1,931	7,500	79.03	1,505	--	--	1,807	--	3,312	25		4,263		4,288
	S	2,271	9,617		1,598	--	--	1,807	--	3,405	200		6,012		6,212
1854,'57-59	% S	2,453	13,008*	100.00	16.62			18.79		35.41	2.08		62.51		64.59
													9,648		
1860-69	H		26,865	22.87	2,470	--	--	7,295	--	9,765	830	3,270	13,000		17,100
	L		90,614	77.13	6,386	--	--	46,188	--	52,574	765	1,500	35,775		38,040
	S	26,131	117,479		8,856	--	--	53,483	--	62,339	1,595	4,770	48,775		55,140
	%			100.00	7.54			45.53		53.06	1.36	4.06	41.52		46.94
1870-78	H		84,215	26.37	26,165	629	55	5,287	--	32,136	60	25,619	26,250	150(G)	52,079
	L		204,377	63.99	43,069	3,050	20	40,092	--	86,231	--	18,865	99,281	--	118,146
1870-79	S	62,572	319,392		81,004	3,679	75	52,884	--	137,642	60	47,102	134,438	150	181,750
	%			100.00	25.36	1.15	0.02	16.56		43.10	0.02	14.75	42.09	0.05	56.90
1880-89	%	100,074	686,151	100.00	237,571 34.62	17,400 2.54	1,454 0.21	252,154 36.75	--	508,579 74.12		118,794 17.31	58,778 8.57		177,572 25.88
1890-99	%	62,996	411,454	100.00	201,418 48.95	11,014 2.68	2,164 0.53	90,256 21.94	44 --	304,896 74.10		101,324 24.63	5,234 1.27		106,558 25.90
1900-03	%	21,107	135,211	100.00	50,401 37.28	6,656 4.92	--	36,266 26.90	38 --	93,361 69.05	--	32,068 23.72	9,782 7.23		41,850 30.95
1900-09		35,986	285,066							174,653					110,413
1922/23-1928/29	H		136,691	66.61											
	L		58,293	28.40											
-1929/30	S	19,454	205,224	100.00						197,214 96.10					8,010 3.90
TOTAL 1857-1903	S	275,151	1,679,304		580,848	38,749	3,693	486,850	82	1,110,222	1,855	304,058	263,019	150	569,082
	%			100.00	34.59	2.31	0.22	28.99	--	66.11	0.11	18.11	15.66	0.01	33.89
1854,1859-1929/30	%	290,212	2,037,774	100.00*						1,388,728 68.15					645,655 31.68

YEARS	PRODUCT	VALUE £	VALUE %	AUSTRALIAN STATES N.S.W. £	Q. £	S.A. £	VIC. £	W.A. £	TOTAL £	OVERSEAS N.Z. £	U.K. £	PACIFIC FIJI £	GUAM £	N.C. £	N.G. £	M. £	OTHER £	TOTAL £
1857-59	Sawn	162,697	50.12	15,476	--	5,885	134,953	--	156,314	6,023			105			255		6,383
	Paling	109,317	33.67	7,667	--	15,900	80,672	--	104,239	4,963	--		115	--				5,078
	Battens	3,035	0.93	2,035	--	255	660	--	2,950	35						50		85
	Boards & Planks	3,842	1.18	235	--	220	3,387	--	3,842									--
	Laths, Shingles	20,781	6.40	7,055	--	2,397	9,036	--	18,488	2,243			50					2,293
	Logs, Hewn	--	--	--	--	--	--	--	--	--								--
	Piles & Beams	4,843	1.49	--	--	10	4,758	--	4,768	75								75
	Posts & Rails	17,299	5.33	72	--	80	16,802	--	16,954	345								345
	Shaped Pieces	2,782	0.86	10	--	410	2,289	--	2,709	73								73
	Staves & Trenails	50	--	--	--	--	50	--	50									--
	TOTAL £	324,646		32,550	--	25,157	252,607	--	310,314	13,757			270			305		14,332
	%		100.00	10.03		7.75	77.81		95.59	4.24			0.08			0.09		4.41
1860-69	Sawn	237,134	39.95	17,739	2,460	50,898	91,206	--	162,303	73,476	950		205	65		50	85(C,V)	74,871
	Paling	269,549	45.42	23,603	5,460	57,448	124,273	--	210,984	57,595	--		790	170			10(C)	58,565
	Battens	7,615	1.28	3,875	140	1,405	610	--	6,030	1,530						55		1,585
	Blackwood	3,727	0.63	--	--	168	3,559	--	3,727	--								--
	Laths, Shingles	39,345	6.63*	7,010	1,028	2,619	3,990	--	14,647	19,618			540	15				20,173
	Logs, Hewn	5,324	0.90	5	--	314	5,005	--	5,324	--								--
	Piles & Beams	6,943	1.17	50	--	361	4,052	--	4,463	2,480								2,480
	Posts & Rails	10,320	1.74	994	23	273	4,618	--	5,908	4,387			15	10				4,412
	Shaped Pieces	--	--	--	--	--	--	--	--	--								--
	Staves & Trenails	13,547	2.28	2,845	250	861	8,284	--	12,240	627	645		25				10(C)	1,307
	TOTAL £	593,504		56,321	9,361	114,347	245,597	--	425,626	159,713	1,595		1,575	260		105	105	163,353
	%		100.00*	9.49	1.58	19.27	41.38		71.71	26.91	0.27		0.27	0.04		0.02	0.02	27.52
1870-79	Sawn	267,911	42.50	2,151	560	99,841	65,961	--	168,513	94,837	600	10	1,336	2,030	540		45(H.K.)	99,336
	Paling	260,028	41.25	29,071	5,646	51,308	109,725	--	195,750	62,367	47		540	1,055	250		10(H.K.)	64,279
																	10(B)	
	Battens	488	0.08	103	--	160	25	--	288	200								200
	Blackwood	10,693	1.70	34	--	1,244	9,291	--	10,569	92	32							124
	Laths, Shingles	40,787	6.47	722	--	4,076	657	--	5,455	35,107			30	165	30			35,332
	Logs	8,276	1.31	125	--	1,299	6,852	--	8,276	--								--
	Piles & Beams	1,725	0.27	--	--	155	388	--	543	1,182								1,182
	Posts & Rails	11,499	1.82	40	20	505	1,885	--	2,450	8,967			82					9,049
	Shaped Pieces	4,685	0.74	154	3	2,057	471	--	2,685	2,000								2,000
	Staves	24,294	3.85	3,736	588	2,773	14,047	--	21,144	373	2,737						40(H.K.)	3,150
	TOTAL £	630,386		36,136	6,817	163,418	209,302	--	415,673	205,125	3,416	10	1,988	3,250	820		105	214,714
	%		100.00	5.73	1.08	25.92	33.20		65.94	32.54	0.54	--	0.32	0.52	0.13		--	34.06
1880-89	Sawn	267,406	53.05	8,566	616	82,486	118,969	--	210,637	53,004	31	1,813	847	1,075				56,770
	Paling	119,690	23.74	15,222	479	35,869	36,717	--	88,287	30,525	319	242	255	62	--			31,403
	Battens	12	--	--	--	--	12	--	12	--	--							--
	Logs	22,949	4.55	2,130	69	2,269	18,350	--	22,818	131	--							131
	Blackwood Sawn	33,594	6.66	722	--	2,002	30,787	--	33,511	36	47							83
	Laths, Shingles	10,063	2.00	120	--	4,357	267	--	4,744	5,293				26				5,319
	Logs	17,405	3.45	1,396	10	3,029	12,842	--	17,277	128								128
	Piles & Beams	508	0.10	24	--	--	84	--	108	400								400
	Posts & Rails	8,460	1.68	180	--	426	3,106	--	3,712	4,741		7						4,748
	Shaped Pieces	8,889	1.76	177	114	2,071	3,375	--	5,737	3,110	38	2	2					3,152
	Staves	15,099	3.00	6,681	517	3,430	3,720	--	14,348	154	597							751
	TOTAL £	504,075		35,218	1,805	135,939	228,229	--	401,191	97,522	1,032	2,064	1,104	1,163				102,885
	%		99.99	6.99	0.36	26.97	45.28		79.59	19.35	0.20	0.41	0.22	0.23				20.41

																S.AFRICA	FRANCE	
1890-99	Sawn	160,625	51.11	6,581	8,973	58,578	14,078	1,383	89,593	40,619	11,251	—	—	1,260	—	12,441	5,461	71,032
	Paling	35,702	11.36	1,651	69	20,973	1,709	28	24,430	11,272	—			—		—	—	11,272
	Logs	12,352	3.93	3,071	89	2,756	5,405	—	11,321	1,013	18							1,031
	Blackwood Sawn	56,327	17.92	17,308	20	5,546	29,885	40	52,799	387	3,141							3,528
	Laths, Shingles	1,117	0.36	276	—	251	345	—	872	245								245
	Logs	6,470	2.06	544	83	2,955	2,212	—	5,792	28	650							678
	Piles & Beams	—	—	—	—	—	—	—	—	—	—							—
	Posts & Rails	1,902	0.61	67	—	193	314	—	574	1,328								1,328
	Shaped Pieces	9,334	2.97	1,071	17	1,455	4,273	21	6,837	2,497								2,497
	Staves	30,429	9.68	20,556	4,586	2,755	1,983	—	29,880	529	20							549
	TOTAL £	314,258		51,125	13,837	95,460	60,199	1,472	222,098	57,918	15,080	—	—	1,260	—	12,441	5,461	92,160
	%		100.00	16.27	4.40	30.38	19.16	0.47	70.67	18.43	4.80			0.40		3.96	1.71	29.33
1900-03	Sawn	104,192	55.05	13,024	383	19,937	18,818	519	52,681	30,846	9,267	520				10,878		51,511
	Paling	17,327	10.82	797	—	8,141	1,429	—	10,367	5,952	8							6,860
	Logs	3,697	2.31	379	—	903	2,085	—	3,367	90	240							330
1900-02	Blackwood Sawn	21,013	13.12	5,703	—	1,868	12,524	—	20,095	298	620							918
	Laths, Shingles	10	—	—	—	—	2	—	2	8								8
	Logs	3,189	1.99	341	—	2,094	744	—	3,179		10							10
	Piles	5,435	3.39	—	—	—	—	—	—	—	4,415	1,020						5,435
	Posts	418	0.26	—	—	—	—	—	—	418	—							418
	Shaped Pieces	2,889	1.80	396	9	32	1,795	29	2,261	621	7							628
	Staves	2,002	1.25	436	330	645	575	—	1,986	16								16
	TOTAL £	160,172		21,076	722	33,620	37,972	548	93,938	39,249	14,567	1,540				10,878		66,234
	%		100.00	13.16	0.45	20.99	23.71	0.34	58.65	24.50	9.09	0.96				6.79		41.35
1903-09	Sawn	634,154	91.70						306,321									327,233
	Paling	41,911	6.06						20,066									21,845
	Logs	11,023	1.59						5,446									5,577
	Staves	3,898	0.56						3,892									6
	Dressed	599	0.09						599									—
	TOTAL £	691,585							336,924									354,661
	%		100.00						48.72									51.28
1922/23-1929/30	Sawn B	504,604	13.53						504,534									70
	Sawn O	2,314,942	62.08						2,106,538									208,404
	Paling	299,064	8.02						264,900									34,164
	Logs B.	70,321	1.88						70,321									—
	Logs O	46,659	1.25						44,707									1,952
	Dressed B	16,823	0.45						15,823									—
	Dressed O	418,637	11.23						417,272									1,365
	Staves	58,214	1.56						57,172									1,042
	TOTAL £	3,729,264							3,482,257									246,997
	%		100.00						93.38									6.62
																	OTHER	
1857-1903	Sawn	1,199,965	47.56	63,537	12,992	317,625	443,985	1,902	840,041	298,804	22,099	2,343	2,493	4,430	540	23,319	5,896 (C10)	359,924
	Paling	811,614	32.17	78,211	11,654	189,339	354,525	28	634,057	173,674	374	242	1,700	1,287	250	—	30(HX10) (B10)	177,557
	Battens	11,150	0.44	6,013	140	1,820	1,307	—	9,280	1,765	—	—	—	—	—	—	105(M)	1,870
	Logs	53,418	2.12	5,614	158	7,340	38,690	—	51,802	1,326	290	—	—	—	—	—	—	1,616
	Blackwood Sawn	110,934	4.40	23,733	20	9,416	73,196	40	106,405	721	3,808	—	—	—	—	—	—	4,529
	Laths, Shingles	112,103	4.44	15,183	1,028	13,700	14,297	—	44,208	62,514	—	—	646	180	30	—	—	63,370
	Logs	40,654	1.61	2,411	93	9,689	27,655	—	39,848	156	660	—	—	—	—	—	—	816
	Piles & Beams	19,454	0.77	74	—	526	9,262	—	9,882	4,137	4,415	1,020	—	—	—	—	—	9,572
	Posts & Rails	49,898	1.97	1,353	43	1,477	26,725	—	29,598	20,186	—	7	97	10	—	—	—	20,300
	Shaped Pieces	28,579	1.13	1,808	143	6,025	12,203	50	20,229	8,301	45	2	2	—	—	—	—(C10)	8,350
	Staves	85,420	3.39	34,254	6,271	10,464	28,659	—	79,647	1,699	3,999	—	25	—	—	—	50(HX40)	5,773
	TOTAL £	2,523,199		232,191	32,542	567,721	1030,524	2,020	1,864,997	573,283	35,690	3,614	4,963	5,907	820	23,319	6,081	653,677
	%		100.00*	9.20	1.29	22.50	40.84	0.08	73.91	22.72	1.41	0.14	0.20	0.23	0.03	0.92	0.24	25.91

* Laths and Shingles - detail regarding destination lacking for £ 4,525 or 0.76% of decennial exports and 0.28% of final total.

M. Mauritius (£ 410 Total exports)
N.C. New Caledonia
N.G. New Guinea
H.K. Hong Kong (£ 50)
B. Batavia (£ 10)

APPENDIX 20. PRICE OF FIREWOOD AND TIMBER IN HOBART, 1849 - 1922.

YEAR	FIREWOOD per TON				TIMBER				
	GUM		BLUEGUM		SAWN	PALINGS per 100		SHINGLES	
	UNCUT (in log)	SPLIT	UNCUT	SPLIT	per 100 ft.	6 ft.	5 ft.	per 1000	
1849	3/6								
1850	3/6								
1851	9/-								
1852	14/-								
1853	13/-								
1854	£1.0.0.	£1.10.0							
1855	17/-	£1. 0.0							
1856	10/-	15/-							
1857	n.a.								
...									
1867	n.a.								
1868	8/- to 9/-		10/- to 12/-		--	9/- to 10/6	6/- to 10/6	10/- to 11/-	
1869	7/6 to 9/-		10/- to 12/-		--	8/- to 10/6	7/- to 9/-	10/- to 11/-	
1870	7/6 to 9/-		10/- to 12/-		--	8/- to 10/6	7/- to 8/6	10/6	
1871	8/- to 9/-		11/- to 12/6		--	8/- to 10/6	7/- to 8/6	9/- to 10/6	
1872	12/-	14/-	14/-	17/-	--	7/6 to 10/-	7/- to 8/6	7/6 to 10/-	
1873	11/- to 16/-		17/6		7/6 to 8/6	9/- to 10/6	7/6 to 9/-	10/- to 10/6	
1874	11/-		13/-		9/- to 9/6	11/6	11/6	8/- to 10/6	
1875	11/6		16/-		8/6 to 9/6	10/- to 12/-	7/6 to 10/6	12/-	
1876	11/9		16/3		8/-	10/- to 11/6	8/- to 10/-	12/3	
1877	11/-	16/-	16/-	20/-	8/-	10/- to 11/-	8/6 to 10/-	12/-	
1878	14/-	16/-	16/-	20/-	7/6 to 8/-	10/- to 12/6	8/- to 10/-	12/-	
1879	n.a.				7/6 to 8/-	10/- to 12/6	8/- to 10/-	10/- to 12/-	
1880	9/- to 10/-		11/- to 18/-		7/6	10/- to 11/-	8/- to 10/-	12/-	
1881	9/- to 12/-	12/- to 14/-	10/- to 12/-	16/- to 18/-	7/6	10/- to 12/-	8/- to 10/-	12/-	
1882	10/- to 16/6	15/- to 18/-	10/- to 15/-	16/- to 16/-	7/6	8/9 to 12/-	7/6 to 10/-	12/6 to 14/-	
1883	10/- to 16/-	15/- to 18/-	14/- to 18/-	16/- to 21/-	7/6	8/9 to 12/-	7/6 to 10/-	12/6 to 14/-	
1884	10/- to 17/-	13/- to 20/-	14/- to 20/-	18/- to 22/-	7/6	8/9 to 12/-	7/6 to 11/-	12/6 to 15/-	
1885	10/- to 17/-	13/- to 20/-	14/- to 20/-	18/- to 22/-	7/-	10/6 to 11/6	9/- to 10/-	12/6 to 13/6	
1886	12/- to 17/-	13/- to 20/-	14/- to 18/-	18/- to 22/-	7/-	10/- to 11/6	9/- to 11/6	12/- to 13/6	
1887	12/- to 17/-	13/- to 20/-	14/- to 18/-	18/- to 22/-	7/-	10/- to 11/6	9/- to 11/6	12/- to 13/6	
1888	12/- to 18/-				7/-	10/- to 11/6	9/- to 11/6	12/- to 13/6	
1889	10/- to 11/-	12/- to 14/-	13/- to 15/-	14/- to 18/-	7/-	10/- to 11/6	9/- to 11/6	12/- to 13/6	
1890	10/- to 14/-				7/-	10/- to 11/6	5/- to 11/6	12/- to 13/6	
1891	10/-	15/-	15/-	20/-	6/6	10/6	9/-	12/6	
1892	10/-	15/-	15/-	20/-	6/-	10/-	8/-	12/-	
1893	8/- to 10/-	14/- to 15/-			6/- to 6/6	9/- to 10/-	7/6 to 8/-	10/6 to 12/-	
1894	7/-	10/-			6/-	8/-	7/-	9/6	
1895	6/-	10/-			6/-	8/-	7/-	9/6	
1896	7/-	9/-			6/-	8/-	7/-	9/6	
1897	6/-	10/-			5/-	8/6	7/6	9/-	
1898	7/-	11/-			5/-	8/6	7/6	9/-	
1899	8/-	12/-			5/-	8/6	7/6	9/-	
1900	8/-	12/-			5/-	8/6	7/6	9/-	
1901	8/6	13/-			5/6	8/6	7/6	10/-	
1902	9/-	13/6			6/-	9/6	8/6	11/-	
1903	10/-	14/-			6/-	9/6	8/-	11/-	
1904	10/-	14/-			6/-	9/6	8/-	10/-	
1905	9/6	14/-			6/-	10/6	9/-	11/-	
1906	10/-	15/-			6/-	10/6	9/-	11/-	
1907	10/-	15/-			6/-	10/6	9/-	11/-	
1908	10/-	15/-			7/6	12/-	10/6	11/-	
1909	10/-	15/-			7/-	10/6	9/6	13/-	
1910	10/-	15/-			8/-	12/-	10/6	11/-	
1911	11/-	16/-			8/-	12/-	10/6	11/-	
1912	12/-	16/-			10/-	13/-	10/6	12/-	
1913	12/-	17/-			10/-	13/-	10/6	12/-	
1914	13/-	17/-			8/6	14/-	12/-	14/6	
1915	14/-	18/-			8/6	14/-	12/-	14/6	
1916	17/-	20/-			10/-	15/-	13/-	20/-	
1917	16/-	20/-			10/-	14/-	12/-	18/-	
1918	16/-	17/-			10/-	14/-	12/-	18/-	

YEAR	HARDWOOD SAWN			SAWN	SPLIT
	SCANTLINGS	SAWN PREPARED FLOORING	PREPARED WEATHER-BOARDS	PALINGS	SHINGLES
	per 100 sup. ft.	per 100 running ft.		5 ft. per 100	per 1000
1919	18/11	22/9 to 25/-	33/-	18/-	15/6	17/6	25/-	30/-
1920	32/6	40/-	20/-	18/6	22/6	28/4	33/4
1921	30/-	35/-	18/6	22/-	26/3	30/-
1922	30/-	35/-	17/-	17/-	18/-	24/-	27/6
1923	n.a.						

STATISTICS OF TA

The earliest years reflect "the average price on 31st December each year."
The later years are based on the "general retail prices at Hobart during that year."